KRUPAUER, KAMIL

CZECHOSLOVAKIA / Chemical Technology, Chemical Products H
and Their Application, Part 2. - Ceramics, Glass, Binders, Concretes. -
Glass.

Abs Jour: Ref Zhur-Khimiya, No 18, 1958, 61730.

Author : Kamil Krupauer
Inst : Not given.
Title : Contribution to Question of Studying Mechanical Properties and Thermal Stability of Sight Glasses.

Orig Pub: Chem prumysl, 1957, 7, No 11, 607 - 609.

Abstract: A study of mechanical properties of flat round sight glasses (G) 215, 265 and 315 cm in dia. depending on the pressure (1 to 7 atm) and thickness (8 to 20 mm) and of their thermal stability at heating and rapid cooling was carried out. Their chemical composition was (by weight)

Card 1/3

CZECHOSLOVAKIA / Chemical Technology, Chemical Products H
and Their Application, Part 2. - Ceramics, Glass, Binders, Concretes. -
Glass.

Abs Jour: Ref Zhur-Khimiya, No 18, 1958, 61730.

Abstract: SiO_2 - 73.7%, Al_2O_3 - 0.83%, Fe_2O_3 - 0.035%, CaO - 6.4%, MgO - 0.04%, Na_2O + K_2O - 18.02%, SO_3 - 0.22%, Cl - 0.1% and As_2O_3 - 0.6%. The round G-s were preliminarily checked with a polariscope in order to establish whether the stresses were distributed uniformly in them, after which they were fastened in rubber rings and water was pumped with a hand operated piston pump increasing the pressure at the rate of 4 atm per min. until cracks appeared in the glass. The experimental results were plotted as graphs with coordinates pressure and G thickness (at a constant diameter); the following dependence was

CZECHOSLOVAKIA / Chemical Technology, Chemical Products H
and Their Application, Part 2. - Ceramics, Glass, Binders, Concretes. -
Glass.

Abs Jour: Ref Zhur-Khimiya, No 18, 1958, 61730.

Abstract: derived: σ is = 200 / 160 $(1.5 - t)^2$, where t is the thickness of the glass within the range from 0 to 1.5 cm. The mechanical strength of glasses decreases with the increase of their diameter. The test of the thermal stability showed that the glasses stand temperature shocks of 45 ± 5° without breaking down; the admissible rate of heating depends on the G thickness: it is 12° per min. at 8 mm thickness and 2° per min. at 20 mm thickness.

Card 3/3

KRUPAUER, Vladimir, inz., CSc.

Research on fish culture in the seven-year plan. Vest ust zemedel 10 no.10/11:408-410 '63.

1. Vyzkumny ustav rybarsky a hydrologicky, Vodnany.

DARONYAN, S.; KRUPCHANOV, L.

Award of the M.V.Lomonosov prizes for 1953. Vest.Mosk.un.8 no.9:171 S '53.
(MLRA 6:11)
(Moscow University--Prizes)

ACCESSION NR: AP4022900 S/0148/64/000/003/0179/0184

AUTHORS: Krupchatnikov, L. S.; Tseytlin, V. Z.

TITLE: Influence of surface cold working on the heat resistance of chromium nickel alloy

SOURCE: IVUZ. Chernaya metallurgiya, no. 3, 1964, 179-184

TOPIC TAGS: chromium nickel alloy, alloy EI617, cold working, heat resistance, tensile strength, isothermal heating, hardness ductility

ABSTRACT: This investigation of the influence exerted by cold working on the heat resistance of chromium-nickel alloy EI617 was undertaken in order to verify and expand the existing data. Cold work was applied by the ball-impact method described by M. I. Kuz'min (Novyy method otdelki poverkhnosti detaley naklepyvaniyem, Informatsionno-tekhnicheskiy listok N. 14, 1952. Vsesoyuznoye obshchestvo po rasprostraneniyu politicheskikh i nauchnykh znaniy). Flat and cylindrical samples were tested on a revolving table. By measuring the hardness on an oblique section, the depth of cold work influence was determined to be 0.9-1.0 mm. Surface hardness

Card 1/3

exceeded core hardness by 41.4% and diminished with depth. The degree of cold work effect on the cylindrical samples was determined as the ratio: Volume (after cold work)/Volume (original) = 0.77. Residual compressive surface stresses produced by cold working were measured to be 51 kg/mm^2 by the method of N. N. Davidenkov (ZhTF, 1931, vyp. 1). The process of cold working also produced slip lines in the metal structure. The samples were heated isothermally and held at temperatures of 600-1000C for 100 hours. Some residual stresses persisted, even after 100 hours at 800C. Slip lines began to diminish at 800C and disappeared at higher temperatures. Phase separation along grain boundaries became more intense as the time of exposure to high temperatures was increased. The thickness of the hardened metal was not affected by treatment at 600C, but diminished greatly at 900C. After 100 hours at 1000C the hardness was uniform throughout the sample. The progressive diminution of hardness with increase of temperature is shown on Fig. 1 of the Enclosures. Cylindrical samples, 8 mm in diameter and 40 mm long, were investigated for their tensile strength, one part being tested in the original condition and another after cold working. Experiments were conducted at 600, 700, 800, and 900C. Time-to-failure and ductility (necking) were recorded. It was determined that cold working slightly lowers the strength of this alloy, as shown in Fig. 2 of the Enclosures.

ACCESSION NR: AP4022900

The influence of cold working on the ductility is more pronounced, but diminished at higher temperatures. The relation between the temperature and necking is presented in Fig. 3 of the Enclosures. Orig. art. has: 8 figures.

ASSOCIATION: Moskovskiy institut elektronnogo mashinostroyeniya (Moscow Institute of Electronic Machine Construction)

SUBMITTED: 22Apr61 DATE ACQ: 10Apr64 ENCL: 02

SUB CODE: ML NO REF SOV: 005 OTHER: 000

Card 3/5

L 4301-66 EWT(1)/FCC GW

ACCESSION NR: AT5022877 UR/2789/65/000/063/0031/0036
551.551.5;551.557.5

AUTHORS: Krupchatnikova, T. P.; Litovchenko, V. P. 44,55 44,55

TITLE: Computing the distribution of turbulence in jet streams

SOURCE: Tsentral'naya aerologicheskaya observatoriya. Trudy, no. 63, 1965. Voprosy dinamiki atmosfery (Problems of atmospheric dynamics), 31-36

TOPIC TAGS: turbulence coefficient determination, turbulence, turbulent flow, turbulent jet, jet stream, approximation method 12,44.55

ABSTRACT: The authors study the problem of determining the parameters of turbulence in jet streams. The investigation takes into account the nonuniformity of the wind field in the horizontal plane. A first approximation to the solution of the system of equations for jet streams is taken for the case where the members $\frac{\partial u}{\partial t}$, $\frac{\partial v}{\partial t}$, $u\frac{\partial u}{\partial x}$, $u\frac{\partial v}{\partial x}$, $v\frac{\partial u}{\partial y}$ and $v\frac{\partial v}{\partial y}$ are small with respect to the other members of the equation of motion; a further assumption is that the direction of the geostrophic wind is essentially invariant with altitude. The equations of motion under these circumstances may be written as

Card 1/8

$$k(x, y)\frac{\partial^2 u}{\partial z^2} + 2\omega_s v = 0$$

$$k(x, y)\frac{\partial^2 v}{\partial z^2} - 2\omega_s (u - u_g) = 0$$

$$\int_0^H \left[\left(\frac{\partial u}{\partial z}\right)^2 + \left(\frac{\partial v}{\partial z}\right)^2\right] dz - \int_0^H \frac{g}{T}(\gamma_a - \gamma)\, dz = 0$$

$$v(z)\big|_{z=H} = 0$$

where axis x is in the direction of jet stream flow, y is the perpendicular horizontal axis, and z is the vertical, positive in the upward direction. The functions u(x, y, z) and v(x, y, z) are the real wind components; k(x, y) - the turbulence coefficient which is viewed as being independent of altitude z; ug (x, y, z) is the velocity of the geostrophic wind. Boundary conditions are

$$\frac{\partial u}{\partial z} = \frac{\partial v}{\partial z} = 0 \quad \text{at} \quad z = 0$$

$$u(z) \neq \infty, \quad v(z) \neq \infty \quad \text{at} \quad z \to \infty.$$

ACCESSION NR: AT5022877

The solution of this system for $z > 0$ is

$$u(x, y, z) = \frac{ab(x, y)}{2a(n^2+1)} e^{-az}\left[(n-1)\cos az + (n+1)\sin az\right] + \frac{b(x, y)}{n^2+1} e^{-az}$$

$$v(x, y, z) = \frac{ab(x, y)}{2a(n^2+1)} e^{-az}\left[(n+1)\cos az - (n-1)\sin az\right] - \frac{nb(x, y)}{n^2+1} e^{-az}$$

where

$$b(x, y) = (u_m - u_1)\left(\frac{r}{r + x\lg\zeta}\right)^2 e^{-\gamma y} \equiv (u_m - u_1) f(x, y),$$

$$n = \frac{kr^2}{2\omega_z},$$

$$a = \sqrt{\frac{\omega_z}{k}},$$

Card 3/8

L 4301-66

ACCESSION NR: AT5022877

The dimensionless parameters m and n are related to the turbulent layer thickness 2H by the equations

$$(n+1)\cos m-(n-1)\sin m=\sqrt{2n}\,e^{(1-\sqrt{2n})m}$$

$$m=\frac{n(\sqrt{2n}-1)+1}{M\sqrt{2n}\,(n^2+1)\left|1+(1+\sqrt{2n})^2\right|}f^2(x,\ y)$$

$$m=aH$$

$$M=\frac{\kappa^2\beta}{(u_m-u_1)^2a^2}$$

The function f(x, y) is related to m and n as plotted in Figure 1 on the Enclosure, where the parametric curves correspond to variations of x and y. Further curves are plotted to indicate the variation of turbulence coefficient with f(x, y) and M. Figure 2 on the Enclosure is a three-dimensional plot of the parameter variation in the x-y plane. Orig. art. has: 3 figures and 6 equations.

ASSOCIATION: Tsentral'naya aerologicheskaya observatoriya (Central Aerological Observatory)

SUBMITTED: 00 ENCL: 04 SUB CODE: ES

NO REF SOV: 004 OTHER: 000

Card 4/8

L 4301-66

ACCESSION NR: AT5022877

ENCLOSURE: 01

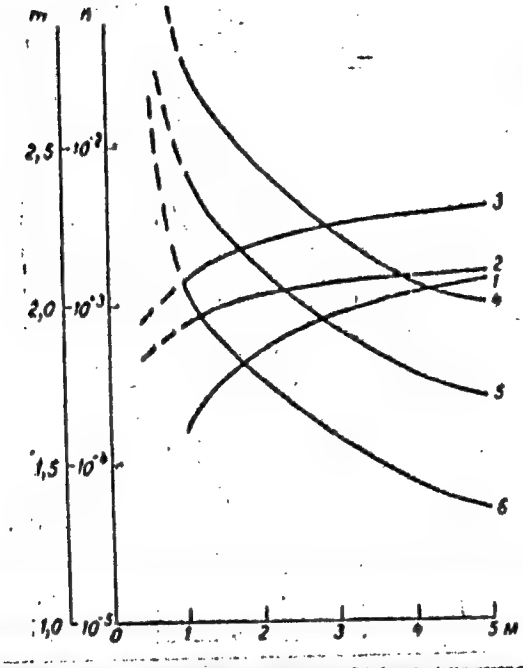
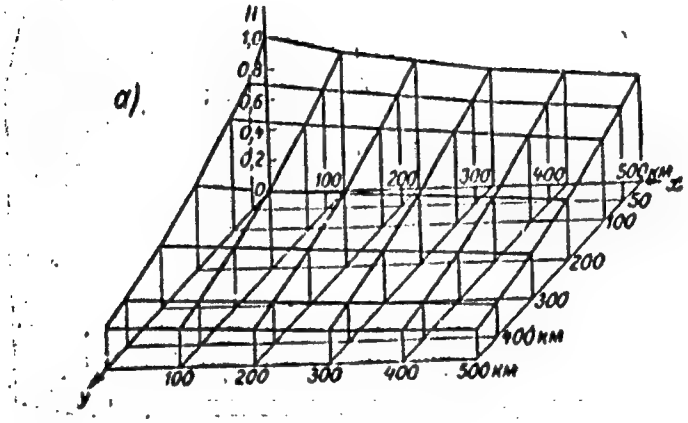


Fig. 1. Variation of dimensionless parameters m and n with the number M and the function f(x, y)

Card 5/8

L 4301-66

ACCESSION NR: AT5022877 ENCLOSURE: 02



to card 7/8

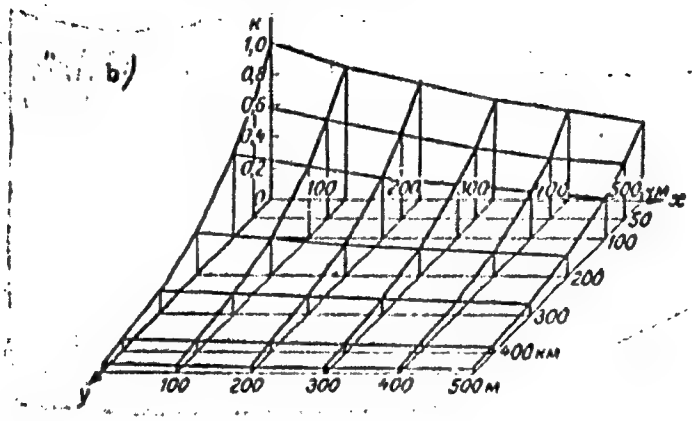
Card 6/8

L 4301-66

ACCESSION NR: AT5022877

ENCLOSURE: 03

from card 6/8



to card 8/8

Card 7/8

L 4301-66

ACCESSION NR: AT5022877 ENCLOSURE: 04

from card 7/8

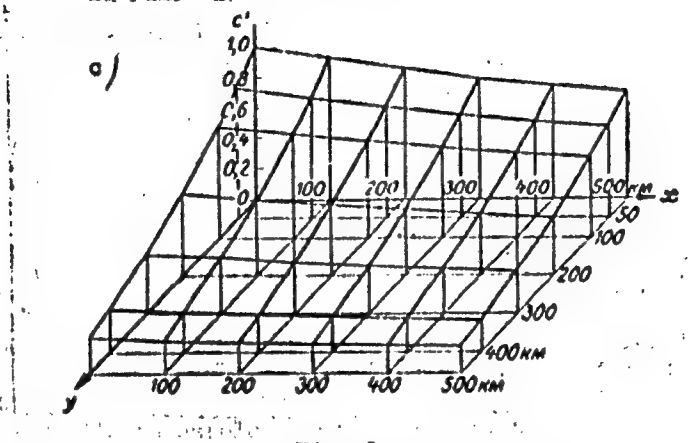


Fig. 2.
Spatial distribution of the turbulent layer H(a), the turbulence coefficient k(b), and the wind gust σ (c)

Card 8/8

ACC NR: AP6015757 SOURCE CODE: UR/0048/66/030/005/0754/0757

AUTHOR: Vertsner,V.N.; Gerling,V.E.; Zenov,B.K.; Krupchatkin,V.D.; Omelin,V.M.; Solov'yev,A.M.; Toporkov,S.A.; Ustimenko,V.V.

ORG: none

TITLE: An x-ray microanalyzer featuring recording without a crystal /Report, Fifth All-Union Conference on Electron Microscopy held in Suny 6-8 July 1965/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no. 5, 1966, 754-757

TOPIC TAGS: x ray analysis, proportional counter, special purpose computer

ABSTRACT: An x-ray microanalyzer is described in which the x rays are recorded directly with a proportional counter without the use of a crystal diffraction x-ray spectrometer. This type of recording has the advantages of simplicity and high sensitivity, and the disadvantage of low resolving power. The electron-optical system of the instrument provides a 3-5 μ diameter probe with a current of about 1 μA. Adjustment is facilitated by an optical microscope with a resolution of 3μ and a working distance of 19 mm, which can be focused by means of a lever without breaking the vacuum. Type CPM-1 sealed off proportional counters as well as flow-type counters have been employed with this instrument. These counters with their associated circuits cannot resolve the K lines of neighboring elements. When the concentrations of neighboring elements

Card 1/2

L 36551-66
ACC NR: AP6015757

is to be determined, the counting rate versus pulse height curve is resolved mathematically into three curves, each representing the contribution of one of three neighboring elements. This resolution is effected automatically by a computing circuit, the operating principle of which is described and is based on a modification of the technique proposed by R.M.Dolby (Proc. Phys. Soc., 73 81 (1959)). The error in determining concentrations of neighboring elements is about 20 %; this large error is due to the long time required for the determination (at least 40 minutes) together with the instability of the proportional counter, the amplifier, and the differential discriminators. When the elements to be determined differ in atomic number by more than 4 or 5 units the different K lines are directly resolved and the error of the determination is not more than 5 %. Under these conditions the computing circuit can be used as a three-channel pulse analyzer for the simultaneous recording of the K line intensities of three different elements. Orig. art. has: 3 formulas and 5 figures.

SUB CODE: 20/ SUBM DATE: 00/ ORIG REF: 000/ OTH REF: 005

Card 2/2 mlp

KRUPCHATNIKOV, V.M.

Use of multispeed electric motors in ventilating installations.
Vod. i san. tekh. no.12:30-32 D '58. (MIRA 11:12)
(Electric motors) (Ventilation)

KRUPCHATNIKOV, V.M.

Calculation of heating apparatus in single-pipe heating systems with closing sections for operation with superheated water. Vod. i san. tekh. no.9:24-29 S '60. (MIRA 13:11)
(Hot-water heating)

KRUPCHATNIKOV, V.M.

Use of froth air washers in air-conditioning installations.
Vod. i san. tekh. no.5:25-29 My '61. (MIRA 14:6)
(Air conditioning)

BOOK EXPLOITATION

[illegible] : 553.76

[illegible] Mikhaylovich

[illegible]ng work with radioactive substances (Ventilyatsiya pri rabotakh [illegible]

[illegible]

Foreword -- 3
Ch. I. Brief information on radioactive substances and their effect on the

Card 1/2

ACCESSION NR: AT4038393 S/2789/64/000/054/0074/0079

AUTHOR: Krupchatnikova, T. P.

TITLE: Turbulence in the vicinity of jet streams

SOURCE: Tsentral'naya aerologicheskaya observatoriya. Trudy*, no. 54, 1964. Atmosfernaya turbulentnost' (Atmospheric turbulence), 74-79.

TOPIC TAGS: atmospheric turbulence, jet stream, vertical wind profile, turbulent layer, jet stream turbulence

ABSTRACT: The article describes the results of a theoretical study of the turbulence characteristics of a jet stream. This work is based on previous studies by Laykhtman and others and on the formulas they derived. Their principal assumptions are that the geostrophic wind is a function of altitude, that the coefficient of turbulent exchange k varies exponentially in the vertical plane of the jet stream, and that the stream is narrow. Formulas

Card 1/3

ACCESSION NR: AT4038393

are derived from which the vertical profile can be plotted and the thickness of the turbulent layer relative to the jet stream axis determined. Wind velocity profiles constructed with these formulas for the case when the coefficient of turbulent exchange close to the jet stream axis was 250 m^2/sec and the vertical change in stream velocity with height was 0, 1/500, and 1/1000, showed that wind profiles differ significantly, depending on whether or not the turbulent exchange coefficient is variable or constant. The author thanks Professor D. L. Laykhtman for guidance in carrying out this work. Orig. art. has: 15 formulas and 1 figure.

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 11Jun64 ENCL: 01

SUB CODE: ES NO REF SOV: 003 OTHER: 000

Card 2/3

ENCLOSURE: 01

ACCESSION NR: AT4038393

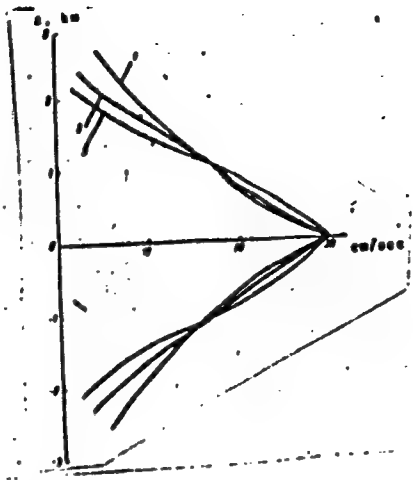


Fig. 1. Wind velocity profiles in jet stream, with K_0 = 250 m^2/sec and different values of β: 1 - β = 0; 2 - β = 1/1000; 3 - β = 1/500.

Card 3/3

CHERNOVA, V.S.; KUZ'MENKO, V.I.; GOL'DINOV, A.I.; KRUPCHINSKIY, A.A.; KEPKO, P.N.

Design of a two-way pressure-type mechanical filter for the purification of wter in water-condigioning units in electric power plants. Suggestion by V.S. Chernov and others. Prom.energ.11 no.12:16-17 D '56. (MLRA 10:1)
(Feed-water purification) (Filters and filtration)

KRUPCHITSKIY, A A.

AUTHOR: Chernova, T. V. 07/30-58-9-25/31

TITLE: Problems Concerning the Water Conditions in Electric Power Plants (Voprosy vodnogo rezhima elektrostantsiy) Conferences in the Institute of Power Engineering (oveshchaniya v energeticheskom institute)

PERIODICAL: Vestnik Akademii nauk SSSR, 1958, Nr 9, pp. 117-119 (USSR)

ABSTRACT: From May 26 to May 28 a scientific technical meeting was held by the Komissiya para vysokikh parametrov pri Energeticheskom institute im. G. M. Krzhizhanovskogo (Committee for High Pressure High Temperature Steam of the Power Engineering Institute imeni G. M. Krzhizhanovskiy). Problems of water conditions and water treatment were dealt with as well as the guarantee of the purity of steam in atomic power plants. Representatives of academic and branch institutes as well as of universities and other interested organizations participated in the conference. It was found that these problems have hitherto not carefully enough been dealt with. The investigation of thermo-physical and physico-chemical processes which take place in atomic power plants is regarded as a

Card 1/ 3

Problems Concerning the Water Conditions in Electric Power Plants. Conferences in the Institute of Power Engineering

main problem of research. It was recommended to promote the further development of radiometrical laboratories and to intensify coordination. It was decided to call a meeting which will have to deal with problems of the method of measuring, control measuring devices and others. From June 24 to June 27 a conference was held by the Committee for High Pressure High Temperature Steam and the Ministerstvo elektrostantsiy SSSR i Moskovskoye otdeleniye Nauchno-tekhnicheskogo obshchestva energeticheskoy promyshlennosti (Ministry of Electric Power Plants USSR and the Moscow Department of the Scientific Technical Association of Power Industry). In this conference the problems of water treatment in thermal power plants for different steam pressure were treated. The following reports were delivered : N. N. Shkrob opened the conference and spoke about the present state and the prospects in the development of water treatment in electric power plants in general. V. N. Vyzhikovskiy, N. P. Gvozdev, Ye. K. Krasotkin and others described plants for water treatment. A. A. Krupchitskiy spoke about the planning of combined cationic plants. O. N. Chemyakina dealt with the purification of water

Card 2/3

ECV/Jo-58-9-45/51

Problems Concerning the Water Conditions in Electric ower Plants. Conference in the Institute of Power Engineering

by means of filtering by absorbents. P. G. Prokhorov reported on the results obtained in the course of industrial experiments with installations for chemical salt-elimination. A. V. Pochkov spoke about new "ionites" for plants of water treatment. V. F. Chernov, S. M. Gurvich and others reported on the planning of equipments for the salt-elimination by chemical means.
The members of the conference decided upon concrete measures in the field of production of special equipment, filtering material and reagents. Proposals were made concerning the improvement of purification of water. In universities more experts in this field are to be trained.

Card 3/3

KRUPCHITSKIY, A.A.

SOV/24-58-10-34/34

AUTHOR: Solodnov, N. S.

TITLE: Conference on Water Preparation in Thermal Power Stations
(O vodopodgotovke na teplovykh elektrostantsiyakh)

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, 1958, Nr 10, pp 159-160 (USSR)

ABSTRACT: During June 24-27, 1958, a conference took place on problems
of water preparation in thermal power stations of high, inter-
mediate, super-high and super-critical pressures. The confer-
ence was convened by the Commission on Steam of Very High
Parameters of the Power Research Institute, Academy of Sciences
USSR, imeni G. M. Krzhizhanovskiy, jointly with the Ministry
of Power Stations USSR and the Moscow Scientific-Technical
Society of the power industry. Over 400 representatives of
scientific research establishments and of power stations par-
ticipated. In the section on design, setting and operation of
combined plant with magnesium desilicizing, the following pap-
ers were read:
1) "Experience in setting up and operation of water treat-
ment plant with desilicizing by means of magnesium", V. F.
Gvozdev (ORGRES).
2) "State and tasks in the development of plant for magnesium
desilicizing of water in thermal power stations" V. M. Kvyat-
kovskiy (VTI),
3) "Schemes of automation of plant with desilicizing by means
of magnesium", Ye. S. Krasotkin and V. M. Kvyatkovskiy (VTI),
4) "Problems of designing combined cation water treatment
plant with magnesium desilicizing". A. A. Krupchitskiy
(Khar'kovskoe otdeleniye TEP).
5) "Desilicizing of the water by means of filters", O. N.
Shevyakin (VODGEO).
6) "Investigation of the process of magnesium desilicizing of
water at elevated temperatures", [illegible] (VTI).
7) "Magnesium-cation method of desilicizing water", L. S.
Falko (Donbassenergo).
In the second section, "Experience in designing, setting and
operation of chemical desalting plant", the following papers
were read:
1) "Results of investigations and of industrial tests of
chemical desalting plant and prospects of their application
in thermal power stations with super-high and above-critical
steam parameters" V. S. [illegible] ([illegible]).
2) "New ionites for water preparation plant and prospects of
their industrial manufacture". A. V. [illegible] (Institut
plastmass im. Frunze).
3) "Problems of design of chemical desalting plant", V. S.
Chernov (KhOTEP). I. M. Sokolov.
4) "Automation of pressure filters for water treatment in
power stations", S. M. Gurvich ([illegible]).
In addition to these papers, [illegible] informative communications
of various local representatives were presented. It trans-
pired that during recent years methods of magnesium desili-
cizing and of thorough chemical desalting of water have
gained extensive utilisation [illegible] power stations and
these played an important role in the development of Soviet
steam power. Successful [illegible] stepwise evaporat-
ion in boilers [illegible] of high pressure
[illegible] reliable and [illegible]
(110 atm) boilers in combined [illegible] During recent years
[illegible] as well as tech-
[illegible] described
[illegible]

Card 3/5

KRUPCHITSKIY, A.A., inzh.

Design of combined cationite water-treatment installations with desiliconization by means of magnesium [with summary in English]. Teploenergetika 6 no.3:61-66 Mr '59. (MIRA 12:4)

1. Khar'kovskoye otdeleniye instituta "Teploelektroproyekt."
(Feed-water purification)

KRUCHININSKIY, V.

Team of Kudrat Meliukov, Hero of Socialist Labor; Andreev kolkhoz of the Kitab District, Kashka-Dar'ya Province Tashkent, Gos. izd-vo UzSSR, 1954. 20 p.

SOV/96-59-3-13/21

AUTHOR: Krupchitskiy, A.A., Engineer

TITLE: Problems in the Design of Combined Cationite Water Purification Installations with Magnesia Desilication (Voprosy proyektirovaniya kombinirovannykh kationitovykh vodopodgotovitel'nykh ustanovok s magnezial'nym obeskremnivaniyem)

PERIODICAL: Teploenergetika, 1959, Nr 3, pp 61-66 (USSR)

ABSTRACT: This article is based on a report read by the author to a conference on water purification for thermal power stations organised by the High-Pressure Steam Commission of the Power Institute Ac.Sc.USSR and others. The use of steam pressured of 140 atm and more somewhat limits the field of application of water purification installations with magnesia de-silication. In the case of condensing stations using these steam conditions, de-silication is replaced by de-salting or evaporation. Again, heat and power stations which deliver industrial process steam can only use a limited proportion of de-silicated water for make-up. In such stations the normal conditions of condensate return govern the water purification process

Card 1/6

Problems in the Design of Combined Cationite Water Purification Installations with Magnesia De-silication

used, whilst the emergency conditions of condensate return govern the output of the water purification plant. The feed-water standards established by the Ministry of Power Stations concern normal operating conditions. A particular case is then considered of a heat and electric power station with boilers operating at a pressure of 140 atm situated on the River Irtysh and the consequences that follow from the new standards are discussed. The conclusion is that in this instance the water purification plant should comprise two installations, one for de-salting and one for de-silication. If hot lime treatment is used, the ratio of the outputs of the two types of water purification plant is more favourable to de-silication. Where it meets the technical requirements, such a combined installation is considerably cheaper than other methods of water purification. When constructing a station, the de-salting installation should be built first, so that the boilers can be supplied whilst the station is being started up. The inclusion of de-silication facilities

Problems in the Design of Combined Cationite Water Purification Installations with Magnesia De-silication

is much more advantageous in stations with boiler pressures of 100 atm and lower. By way of example, Table 1 gives calculated data of water purification plant for a particular heat and electric power station equipped having boilers operating at a pressure of 100 atm with an extension scheme involving boilers at a pressure of 140 atm. Design experience has shown that the obligatory use of standard designs has many disadvantages. It should suffice to standardise the water purification building and such individual components of the plant as affect the unloading of reagents regeneration circuit etc. The principal technological fundamentals of the design should conform to the particular conditions at the station. Difficulties have been caused by lime of poor quality. Such lime is usually unloaded by hand but by a new arrangement of lime warehouses the use of self-unloading wagons has become possible. A schematic diagram of the arrangement is seen in Fig.1. A similar scheme for unloading salts from

Problems in the Design of Combined Cationite Water Purification Installations with Magnesia De-silication

railway trucks is briefly described and illustrated schematically in Fig.2. Acid and caustic soda may be unloaded by means of centrifugal pumps or, if a syphon is used, it may be primed by an ejector operated by compressed air as shown in Fig.3. Methods of dispensing the reagents are then discussed. Ways of measuring out lime and coagulent are described and are illustrated diagrammatically in Fig.4 and 5 respectively. Because of the high outputs of modern water purification plant, large individual units are required; for example, clarifiers have been developed with an output of 400 cu m per hour. Other large plant is briefly described. Recent designs of de-silication installations provide for the following degree of automatic operation: output of the water purifiers is regulated stepwise, according to the level in the intermediate tanks; the necessary quantities of reagent are measured out automatically according to the flow of raw water; washing down of the mechanical filters and regeneration of the cationite filters is automatic and so is neutralisation of the acid

Problems in the Design of Combined Cationite Water Purification Installations with Magnesia De-silication

waters. At present automatic control of water purification is very expensive and its full application to large water purification installations would be uneconomic. By way of illustration, economic calculations are made for three types of installation with the results shown in Table 2. Although a number of novel large installations have been made, some were initially inoperative because of design and constructional defects, which sometimes took a long time to overcome. It is considered necessary to ensure that only high-quality reagents are delivered, particularly lime and filtering materials; it is necessary to develop and organise the production of measuring apparatus, automatic instruments and other water purification equipment; a research centre is required to deal with problems of

Problems in the Design of Combined Cationite Water Purification Installations with Magnesia De-silication

water purification and a special design organisation should also be set up. There are 5 figures, 2 tables.

ASSOCIATION: Khar'kovskoye Otdeleniye Instituta "Teploelektroproyekt" (Khar'kov Division of the "Teploelektroproyekt" Institute)

KRUPCHITSKIY, A.A., inzh.

Peculiarities in the design of large capacity chemical water purification installations for heat and electric power plants with high loss of condensate. Teploenergetika 7 no.6:58-62 Je '60. (MIRA 13:8)

1. Khar'kovskoye otdeleniye Teploelektroproyekta.
(Feed-water purification)

[illegible]

[illegible] KRIVTSOV, A. I. Starogreshky rudnik, zapadnyy [illegible] Voprosy [illegible] Akad. Nauk Ukr. SSR, Inst. Istorii Materialnoy Kultury, No. 9-10.

SO: Letopis, No. 32, 1949.

KRUPCHITSKIY, Aleksandr Matveyevich

[Firstling of Russian medicine] Pervenets russkoi meditsiny. Moskva, Voen.izd-vo, 1958. 170 p. (MIRA 12:3)
(MOSCOW--HOSPITALS)

[redacted], I. A., [redacted]ITIN, S. Ya. and [redacted]ELKIN, V. P.

"(Part II) Dependence of Effective Number of Secondary Neutrons on Energy of Captured Neutrons".

Report appearing in 1st Volume of "Session of the Academy of Sciences USSR on the Peaceful Use of Atomic Energy, 1-5 July 1955", Publishing House of Academy of Sciences USSR, 1955.

SO: Sum 728, 28 Nov 1955.

KRUPCHITSKIY, P. A., Master (Phys-Math) Sci — (diss) "Constants of U^{233} and Pu^{240} isotopes for calculating nuclear reactors", Moscow, 1957. 10 pp, (Acad Sci USSR), 100 copies

(KL, No 39, 1957, p.94)

Krupchitskiy, P.A.

PA - 2305

AUTHOR: KRUPCHITSKIY, P.A.

TITLE: The Absorption Cross-section of Thermal Neutrons and the Resonance Integral of the Absorption of Pu^{240}. (Secheniye pogloshcheniya teplovykh neytronov i rezonancnyy integral pogloshcheniya Pu^{240}, Russian).

PERIODICAL: Atomnaia Energiia, 1957, Vol 2, Nr 3, pp 240 - 246 (U.S.S.R.)
Received: 4 / 1957 Reviewed: 5 / 1957

ABSTRACT: Measurements were carried out on the heavy water reactor on the Academy of Science of the U.S.S.R. in two positions with different spectral composition of the neutron flux: Inside the lattice of the reactor (FERMI spectrum + thermal spectrum) and in the so-called thermal "well" ("column") of the reactor (almost thermal spectrum). The authors used plutonium with three different concentrations of the isotopes Pu^{239}, Pu^{240}, and Pu^{241}. The samples were immerged in the reactor and taken out again by means of an oscillator. The efficiency of the reactor specially switched off from automatic control fluctuated with the same period as the oscillations of the sample. There follows a description of the experimental device namely of the plutonium samples, the oscillator, the neutron chamber, the amplifier, and of the recording device. The series of measurements consisted of successive oscillations of samples. They occurred in the case of a moderate efficiency of the reactor (~300 Watt) without circulation of the heavy water by means of

Card 1/3

the heat exchanger. The following details are given: Investigation of linearity, dependence of the results on the oscillation period, determination of the coefficients k_1 and k_2 which determine the ratio between the flux of the resonance neutrons and the thermal neutrons in the "well" and in the lattice.

Measuring results are given in form of tables and in diagrams (averaged over some measuring series). In the case of samples of the weight chosen here there is no self-screening, a fact that agrees with theoretical estimates. The cross-sections of the absorption of neutrons by Pu^{240}($_{40}$) for the "well" and for the lattice are σ_{40}(well) = (560 ± 35) barn and σ_{40} (lattice) = = (1010 ± 120) barn respectively. Also the constants used for the computation of σ_{40} are given.

Discussion of the results: The here obtained cross-section of the absorption of thermal neutrons by Pu^{240} corresponds very accurately with the contribution made by the neutrons originating from the resonance level with the energy E_0 = 1,075 to the cross-section corresponding to the thermal energy. This agreement indicates the

Card 2/3

The Absorption Cross-Section of Thermal Neutrons and the Resonance Integral of the Absorption of Pu^{240}. PA - 2305

absence of any strong levels of Pu^{240} in the case of energies lower than E_0 down to negative energy values. The value of the cross-section Pu^{240} obtained here probably corresponds to the thermal energy of the neutrons E_T = 0,025 eV.
(2 illustrations and 5 tables).

ASOCIATION: Not given.
PRESENTED BY:
SUBMITTED: 22.9.1956
AVAILABLE: Library of Congress.

Card 3/3

KRUPCHITSKIY, P.A.

-3-4/40

AUTHORS: Bovin, V.V., Krupchitskiy, P.A., Persikin, I.I., Chirikov, B.V.

TITLE: Measurement of Primary Ionization Using the Method of Mean Gap Length in Wilson Chambers and Diffusion Chambers. (Izmereniye pervichnoy ionizatsii po metodu sredney dliny proseta v kamere Vil'sona i v diffuzionnoy kamere)

PERIODICAL: Pribory i Tekhnika Eksperimenta, 1957, Nr 3, pp.19-23 (and 1 plate) (USSR).

ABSTRACT: A detailed description is given of measurements of primary ionisation by the method of mean gap length between drops in tracks of particles in Wilson and Diffusion Chambers. The accuracy obtained was ± 10% in the case of the Wilson Chamber (considerable overlapping; track length 10 cm) and ± 13% in the case of the diffusion chamber (track length 2 cm). The following precautions must be taken in order to obtain such high accuracy. 1. 100% efficiency of condensation on ions is necessary (Ref.7). As a control on the efficiency of condensation particle tracks were separated into two parts by means of a field of 30 V/cm and a comparison of the number of drops

Measurement of Primary Ionization Using the Method of Mean Gap Length in Wilson Chambers and Diffusion Chambers.

down each of these components was carried out. Measurements were carried out on the positive component. Using this method, negative ions (in this case electrons) are separated out and this is useful since the efficiency of condensation on them is always less than 100% and can fluctuate considerably. Changes in the structure of tracks during separation into the two components (Ref.8) did not occur since electronegative admixtures were very small (less than 0.5% O_2). In order to guarantee 100% efficiency of condensation only the central part of the sensitive layer of the chamber was used. The temperature was stabilized.

2. In ionisation measurements it is necessary to use those parts of tracks which do not overlap strong droplet backgrounds.

3. Good illumination of tracks is essential. The Wilson chamber was illuminated by two flash lamps type ИФК-600 and photography was carried out at an angle of 45° to the light beam on a highly sensitive 35 mm film (reduction 1:10, f:20). The diffusion chamber was illuminated continuously with the mercury lamp СВДШ-250. The photography

Measurement of Primary Ionization Using the Method of Mean Gap Length in Wilson Chambers and Diffusion Chambers. 120-3-4/40

was carried out at an angle of 30° to the light beam. The objective of the photographic camera was controlled by a coincidence scheme using Geiger-Muller tubes.
4. High contrast films and developers were used. Fine grain developers are particularly undesirable.
5. Optimum magnification must be used in examining the tracks. The authors have used a magnification of 100. The measured value of primary ionisation for argon recalculated into minimum ionisation are in agreement with the values obtained by G.W.McClure (Ref.10). Similar agreement is obtained for air and carbon dioxide. The following values were obtained for the primary ionisation:-

Air:	21 ± 1.5 ions/cm
Argon	30 ± 2 ions/cm
Carbon dioxide	28 ± 2.5 ions/cm.

There are 7 diagrams, 3 tables and 14 references, 1 Russian, 10 English, 1 French and 1 German.

SUBMITTED: October 14, 1956.

AVAILABLE: Library of Congress.

Card 3/3

1. Cloud chambers 2. Ionization-Measurement 3. Photography

KRUPCHITSKIY, P.A.

89-10-8/36

AUTHORS: Belkin, V.F., Krupchitskii, P.A., Orlov, Yu. V.

TITLE: Measuring Resonance Absorption of Neutrons in Heterogeneous U/D_2O Systems. (Ob izmerenii rezonansnogo pogloshcheniya neytronov v geterogennykh sistemakh v uran - tyazheloy vode).

PERIODICAL: Atomnaya Energiya, 1957, Vol. 3, Nr 10, pp. 320-322 (USSR)

ABSTRACT: Into a tank filled with D_2O various uranium systems (square lattices with a = 10,0; 6,3 and 3,4 cm; uranium rod diameter 1,75; 1,1 and 0,568 cm) could be fitted. Besides, a uranium converter of ϕ = 3 cm, H = 10 cm was fitted into the center which was irradiated with slow neutrons of the Russian heavy water reactor. Indium foils, packed in cadmium holders, were used as neutron detectors. The coefficients α and A of the relation

$$-\Delta\psi - \gamma\psi = \frac{g}{s_3}\left(Q^{3/2} + AQ^2\right)$$

were determined at α = 4,4 $cm^{1/2}$ and A = 0,40 $cm^{-1/2}$. The expression $\gamma s_3 \rho^{-2/3}$ for the uranium D_2O system is, measured by means of this method, lower than in the case of measuring by other methods.

CARD 1/2

Measuring Resonance Absorption of Neutrons in Heterogeneous U/D_2O Systems. 89-10-8/36

Further, the ratio of the neutron density in the lattice center, opposite to the surface of the uranium rods, was measured as well as for an uranium D_2O system (f_U) as also for a Pb-D_2O system (f_{Pb}). An average value of $0,050 \pm 0,015$ was obtained for $f_U - f_{Pb}$. It was found that by the introduction of a scattering substance (Pb) in the lattice the uniform distribution of neutron density is disturbed. The density on the surface of the uranium rods is lower than in the center of the lattice.

There are 2 figures, 3 tables and 5 Slavic references.

ASSOCIATION: None given.
PRESENTED: -
SUBMITTED: April 23, 1957.
AVAILABLE: Library of Congress.

CARD 2/2

KRUPCHITSKIY, P.A.

21(8) PHASE I BOOK EXPLOITATION SOV/2583

International Conference on the Peaceful Uses of Atomic Energy. 2nd, Geneva, 1958.

Doklady sovetskikh uchenykh; fizicheskiye nauki. Tekhnika. Trudy konferentsii ... (Reports of Soviet Scientists; Physical Sciences. Engineering. Transactions of the Conference) Moscow, Atomizdat, 1959. 707 p. (Series: Its: Trudy, vol. 2) Errata slip inserted. 8,000 copies printed.

General Eds.: N.A. Dollezhal', Corresponding Member, USSR Academy of Sciences; A.I. Leypunskiy, Doctor of Physical and Mathematical Sciences, A.K. Krasin, Doctor of Physical and Mathematical Sciences, and V.I. Veksler, Corresponding Member, USSR Academy of Sciences; Ed. of Publishing House: V.V. Matveyev; Tech. Ed.: Ye. I. Mazel'.

PURPOSE: This book is intended for scientists and engineers engaged in reactor designing, as well as for professors and students of higher technical schools where reactor design is taught.

COVERAGE: This is the second volume of a six-volume collection on the peaceful uses of atomic energy. The six volumes contain the reports presented by Soviet scientists at the Second International Conference on Peaceful Uses of Atomic Energy, held from September 1 to 13, 1958 in Geneva. Volume 2 consists of three parts. The first is devoted to atomic power plants under construction in the Soviet Union; the second to experimental and research reactors, the experiments carried out on them, and the work to improve them; and the third, which is predominantly theoretical, to problems of nuclear reactor physics and construction engineering. The introduction to the science section of this volume. See SOV/2581 for titles of all volumes of the set. References appear at the end of the articles.

Bulkin, V.A., A.A. Bresnitskiy, Yu.A. Sitnikov, and O.I. Yuvchenko. Neutron Density Distribution Along the Radius of Assemblies of Enclosed Rod Fissionable Elements (Report No. 2034) 195

Drozd, A.E., N.G. Dubovskiy, N.N. Lantsov, Yu.Yu. Glazkov, A.K. Gonchar-ov, A.V. Kamayev, L.I. Ovcharenko, V.V. Verzilov, Ye. I. Zaytsin, and A.P. Senchenkov. Studying the Physical Characteristics of a Beryllium-moderator Reactor (Report No. 2146) 555

Galanin, A.D., S.A. Kozlovskaya, A.P. Rudik, Yu. O. Aber, V.P. Belkin, and Z.A. Suvenitskiy. Critical Experiment on an Experimental Heavy-water Reactor (Report No. 2038) 570

Karpukhin, O.I., V. Ya. Pupko, Ye. I. Pogudalina, V.V. Senlov, I.P. Tsitovich, S.P. Platonova, and G.I. Bruzhinina. Certain Problems in Nuclear Reactor Physics and Methods of Calculating Them (Report No. 2151) 588

Klayntin, O.V. and V.N. Semenov. Determination of Control Rod Effectiveness in a Cylindrical Reactor (Report No. 2069) 613

Gelfand, I.M., S.M. Permyakov, A.S. Frolov, and N.N. Chentsov. Using the Monte Carlo Method of Random Sampling for Solving the Elastic Equation (Report No. 2111) 626

Laletin, N.I. Neutron Distribution in a Heterogeneous Medium (Report No. 2189) 634

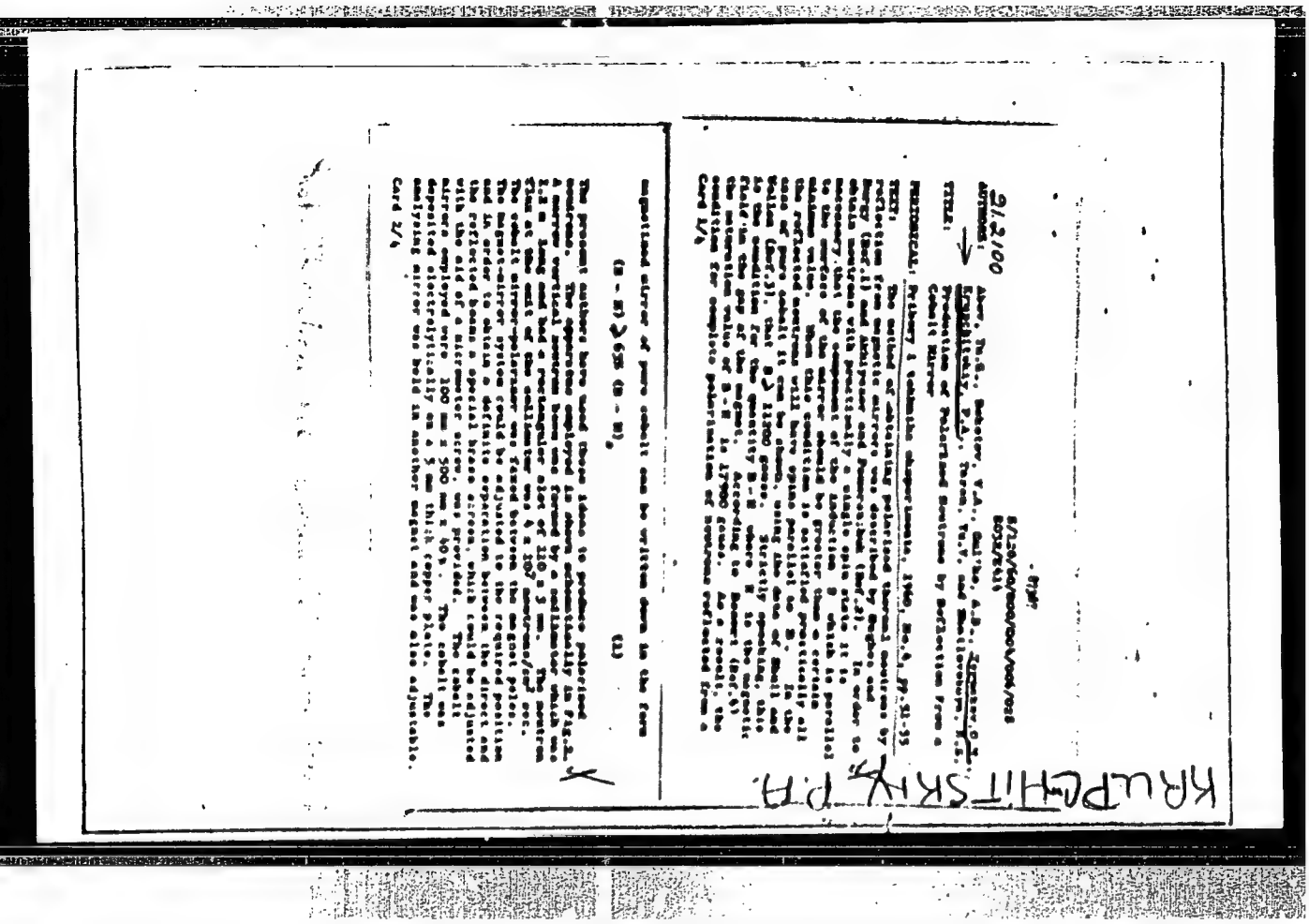
Kazarnovskiy, M.V., A.V. Stepanov, and F.L. Shapiro. Neutron Thermalization and Diffusion in Heavy Media (Report No. 2143) 651

Vernik, A.I., V.S. Ternakov, and A.V. Lykov. Using the Onsager Theory for Studying Neutron Diffusion in the Absorbing Media of Nuclear Reactors (Report No. 2224) 668

Snider, D.L., S.A. Barkin, A.A. Batuzov, V.V. Levin, and V.V. Orlov. Studying the Spatial and Energy Distribution of Neutrons in Different Media (Report No. 2147) 671

Baldriger, A.R. Boron Ionization Chambers for Work in Nuclear Reactors (Report No. 2084) 690

Kirillin, V.A., and S.A. Ulybin. Experimental Determination of Specific Volumes of Heavy Water in a Wide Temperature and Pressure Range (Report No. 2471) 696



KRUPCHITSKIY, P. A.

"Utilization of the Heavy Water Reactor TWR for Nuclear Physics and Reactor Physics Experiments."

report presented at the Symposium on Programming and Utilization of Research Reactors, IAEA, Vienna, 16-21 Oct 1961

KRUPCHITSKIY, P.A., kand. fiz.-mat. nauk, red.; ZAVODCHIKOVA, A.I., red.; POPOVA, S.M., tekhn. red.

[Neutron physics] Neitronnaia fizika; sbornik statei. Moskva, Gos. izd-vo lit-ry v oblasti atomnoi nauki i tekhniki, 1961. 371 p. (MIRA 14:11)

(Neutrons)

33240

S/089/62/012/002/012/013
B102/B138

21.5110

AUTHORS: Abov, Yu. G., Belkin, V. F., Krupchitskiy, P. A.

TITLE: Criticality stand tests of a heavy-water reactor with rod-shaped fuel elements

PERIODICAL: Atomnaya energiya, v. 12, no. 2, 1962, 156 - 159

TEXT: It is hard to make accurate enough calculations for systems with porous fuel elements, as used in power reactors. A special test stand has been developed for checking theoretical results (Fig. 1), and used to find the critical size for heavy-water reactors with various different fuel rod systems. A scram system automatically stops chain reactions when criticality is exceeded. The critical dimensions of five types of working channels were determined in dependence on lattice pitch. Average weight of the fuel elements, uncoated uranium rods (density 18.80 g/cm^3) was 793.0 ± 1g. Criticality was determined from counting rate using four CHM-3 (SNM-3) neutron counters. The heavy-water temperature was kept at

Card 1/4

Fig. 1. Test stand for criticality experiments.
Legend: (1) inner tank 3.5 m high, 3 m in diameter coated outside with 0.5 mm Cd. (2) outer tank, (3) connecting pipe, (4) reflux valve, (5), (7) electrically operated gate valves, (6) pump, (8) water shedding valve, (9) dump tank, (10) water gage glass, (11), (13), (15) hand-operated valves, (12) "breather" line, (14) metering tanks with heavy water; (16) control rods (2 scram rods, 1 regulating rod), (17) neutron source, (18) boron neutron counters.

Fig. 2. Working channel.
Legend: (1) Steel attachment for uranium rods, (2) surrounding (Avial') tube, (3) shielding Avial tubes, (4) remote Avial lattice.

KRUPCHITSKIY, P.A.

"SOVIET PROGRESS IN NEUTRON PHYSICS." New York, Consultants Bureau, 1963
269 p., diagrs., graphs, tables.
Translated from the orginal Russian title: Neytronnaya Fizika, Moscow, 1961
Includes bibliographies.

ABOV, Yu. G.; KRUTCHITSKIY, P. A.; CRATOVSKIY, Yu. A.

"On the existence of internucleon potential nonconserving space parity."

reports submitted for Intl Conf on Low & Medium Energies Nuclear Physics, Paris, 2-8 Jul 64.

ABOV, Yu.G.; KRUPCHITSKIY, P.A.; ORATOVSKIY, Yu.A.

Existence of an internucleon potential not maintaining spatial parity. IAd. fiz. 1 no.3:479-489 Mr '65. (MIRA 18:5)

1. Institut teoreticheskoy i eksperimental'noy fiziki Gosudarstvennogo komiteta po ispol'zovaniyu atomnoy energii SSSR.

L 1962-66 EWT(m)/T/EWA(m)-2

ACCESSION NR: AT5024122 UR/3138/65/000/348/0001/0015

AUTHOR: Vishnevskiy, M. Ye.; Galanina, N. D.; Semenov, Yu. A.; Krupchitskiy, P. A.; Berezin, V. M.; Murysov, V. A.

TITLE: Measurement of the difference in the masses of K_2^0- and K_1^0- mesons

SOURCE: USSR. Gosudarstvennyy komitet po ispol'zovaniyu atomnoy energii. Institut teoreticheskoy i eksperimental'noy fiziki. Doklady, no. 348, 1965. Izmereniye velichiny raznosti mass K_2^0- and K_1^0, 1-15

TOPIC TAGS: meson beam, K meson, pi meson

ABSTRACT: The value of the difference in the masses of K_2^0- and K_1^0-mesons was obtained by measuring the dependence of the intensity of coherent regeneration of K_1^0-mesons in a beam of K_2^0-mesons on the thickness of the regenerator (copper and aluminum). K_1^0-mesons were recorded on the basis of the decay $K_1^0 \to \pi^+ + \pi^-$ with the aid of a magnetic spectrometer with scintillation counters and spark chambers. The distributions of the events over the mass of the decaying particle and angle between its momentum and the direction of the primary beam are given. In all, 196 events of coherently regenerated K_1^0 mesons were recorded. The value $\Delta m = (0.82 \pm 0.14)\hbar/\tau_1 C^2$ was obtained. "The authors thank Academician A. I. Alikhanov and

Card 1/2

L 1962-66
ACCESSION NR: AT5024122

S. Ya. Nikitin for their interest in the work, L. B. Okun' and I. Yu. Kobzarev for their discussion, L. L. Gol'din and members of the technical staff for supervising the operation of the accelerator, and A. K. Dubasov, V. N. Markizov, N. P. Naumov, V. N. Kuz'menkov, and Yu. S. Oreshnikov for assistance in setting up the apparatus and for carrying out the measurements." Orig. art. has: 4 figures, 1 formula.
ASSOCIATION: Institut teoreticheskoy i eksperimental'noy fiziki, Gosudarstvennyy komitet po izpol'zovaniyu atomnoy energii (Institute of Theoretical and Experimental Physics, State Committee for Application of Atomic Energy)
SUBMITTED: 16Apr65 ENCL: 00 SUB CODE: NP

NO REF SOV: 005 OTHER: 005

Card 2/2

ACC NR: AP6030156 (A) SOURCE CODE: UR/0120/66/000/004/0195/0196

AUTHOR: Abov, Yu. G.; Bulgakov, M. I.; Gul'ko, A. D.; Yermakov, O. N.; Krupchitskiy, P. A.; Oratovskiy, Yu. A.; Trostin, S. S.

ORG: Institute of Theoretical and Experimental Physics, GKAE, Moscow (Institut teoreticheskoy i eksperimental'noy fiziki GKAE)

TITLE: Production of polarized beams of thermal neutrons by means of a pile of cobalt mirrors

SOURCE: Pribory i tekhnika eksperimenta, no. 4, 1966, 195-196

TOPIC TAGS: neutron beam, thermal neutron, nuclear research reactor, cobalt, neutron polarization, collimator

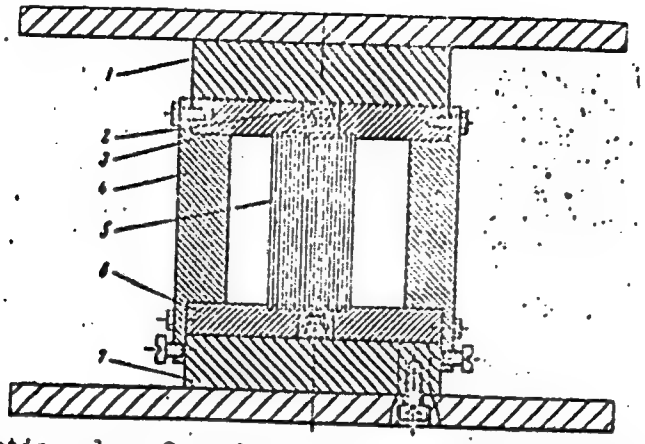
ABSTRACT: A unit for the production of polarized neutron beams needed for experimental purposes is described. The unit, shown below, consists of a collimator and a pile of cobalt mirrors. The collimator, consisting of 10 convergent slits separated by vertical steel plates, is placed in the horizontal channel of a reactor. Each of the cobalt mirrors is backed by glass and the length of each mirror is made up of three separate units 350 x 125 x 3 mm^3 in size. The top and bottom ends of the mirrors are fitted into 10 slots bored through the connecting strips and clamped with wedge clamps so that each mirror has a corresponding slit in the collimator.

Card 1/3

UDC: 539.1.078.539.125.5

The pile of mirrors is set into an electromagnet. The mean angle of beam incidence on a corresponding mirror is 7.5' and all neutron beams reflected by the mirrors converge at a distance of 4.5 m from the pile of mirrors. The incident and reflected beams are separated by means of a sliding screen system made of boron carbide situated near the target. The flow of polarized neutrons on a specimen with an area of 100 x 10 mm^2 amounted to 3 x 10^7 neutrons/sec. The degree of neutron beam polarization amounted to — 90%, and the polarization efficiency of 95%. The authors thank V. A. Beketov and N. S. Shatlovskaya for making the cobalt mirrors, Yu. Ya. Garrison for assembling the pile of mirrors, and A. I. Savushkin, V. K. Rissukhin, O. M. Svetlov, and I. L. Karpikhin for helping with the measurements. Orig. art. has: 1 figure.

ACC NR: AP6030156



1. upper magnetic pole, 2. wedge clamp, 3. upper connecting strip, 4. side wall (brass), 5. cobalt mirror, 6. lower connecting strip, 7. lower magnetic pole

SUB CODE: 20, 18/ SUBM DATE: 31Jul65/ ORIG REF: 001/ OTH REF: 002

Card 3/3

030156 (A) SOURCE CODE: UR/0120/66/000/004/0195/0196

AUTHOR: Abov, Yu. G.; Bulgakov, M. I.; Gul'ko, A. D.; Yermakov, O. N.; Krupchitskiy P. A.; Oratovskiy, Yu. A.; Trostin, S. S.

ORG: Institute of Theoretical and Experimental Physics, GKAE, Moscow (Institut teoreticheskoy i eksperimental'noy fiziki GKAE)

TITLE: Production of polarized beams of thermal neutrons by means of a pile of cobalt mirrors

SOURCE: Pribory i tekhnika eksperimenta, no. 4, 1966, 195-196

TOPIC TAGS: neutron beam, thermal neutron, nuclear research reactor, cobalt, neutron polarization, collimator

ABSTRACT: A unit for the production of polarized neutron beams needed for experimental purposes is described. The unit, shown below, consists of a collimator and a pile of cobalt mirrors. The collimator, consisting of 10 convergent slits separated by vertical steel plates, is placed in the horizontal channel of a reactor. Each of the cobalt mirrors is backed by glass and the length of each mirror is made up of three separate units 350 x 125 x 3 mm^3 in size. The top and bottom ends of the mirrors are fitted into 10 slots bored through the connecting strips and clamped with wedge clamps so that each mirror has a corresponding slit in the collimator.

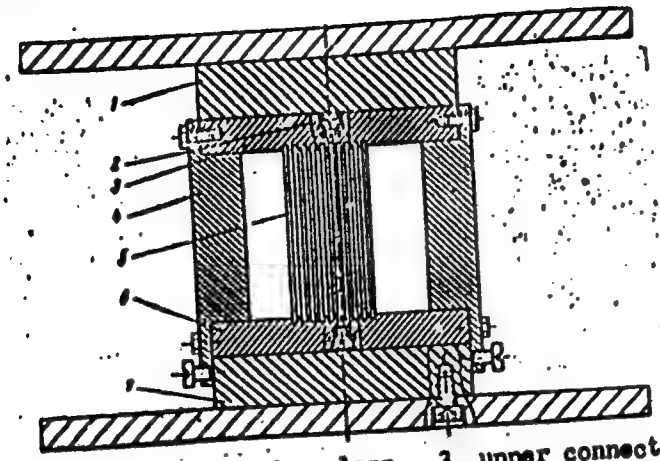
Card 1/3 UDC: 539.1.078.539.125.5

ACC NR: AP6030156

The pile of mirrors is set into an electromagnet. The mean angle of beam incidence on a corresponding mirror is 7.5' and all neutron beams reflected by the mirrors converge at a distance of 4.5 m from the pile of mirrors. The incident and reflected beams are separated by means of a sliding screen system made of boron carbide situated near the target. The flow of polarized neutrons on a specimen with an area of 100 x 10 mm^2 amounted to 3 x 10^7 neutrons/sec. The degree of neutron beam polarization amounted to — 90%, and the polarization efficiency of 95%. The authors thank V. A. Beketov and N. S, Shatlovskaya for making the cobalt mirrors, Yu. Ya. Garrison for assembling the pile of mirrors, and A. I. Savushkin, V. K. Rissukhin, O. M. Svetlov, and I. L. Karpikhin for helping with the measurements. Orig. art. has: 1 figure.

Card 2/3

ACC NR: AP6030156



1. upper magnetic pole, 2. wedge clasp, 3. upper connecting strip, 4. side wall (brass), 5. cobalt mirror, 6. lower connecting strip, 7. lower magnetic pole

SUB CODE: 20, 18/ SUBM DATE: 31Jul65/ ORIG REF: 001/ OTH REF: 002

Card 3/3

Kalinnikii, Ye. I. and Mamontova, Z. S.

"Primeneniye ponyatiya o dopolnitel'noy stenke k raschetu podzemnykh teploprovodov." (Use of the Concept of the Supplementary Shell in the Calculation of Underground Heat Conductors). Leningrad, Tsentral'nyy Kotloturbinnyy Institut im. I. I. Polzunova. Sbornik trudov (Collected works), No. 11, 1947.

RUDNEV, German Viktorovich; GUREVICH, T.V., retsenzent; KRUPE, V.A., retsenzent; KULIK, M.S., otv. red.; YASNOGORODSKAYA, M.M., red.

[Agricultural meteorology] Agrometeorologiia. Leningrad, Gidrometeoizdat, 1964. 277 p. (MIRA 17:8)

KRUPEL'NITSKIY, M. K. (Lab. Asst.)

"Hexahedral Isolation Building for Animals." 2 figures of the building.

Veterinariya, Vol. 38, No. 6, 1961. p. 77

Krupel'nitskiy, M. K. - Kamenets-Podol'sk Agricultural Institute.

KRUPEL'NITSKIY, M.K., laborant

Hexahedral isolation ward for animals. Veterinariia 38 no.6: 77-78 Je '61. (MIRA 16:6)

1. Kamenets-Podol'skiy sel'skokhozyaystvennyy institut.
(Quarantine, Veterinary)

KRUPEN', A.A., rayonnyy akusher-ginekolog

Simultaneous pregnancy and labor in a woman with a double uterus. (MIRA 13:4)
Zdrav.Belor. 5 no.12:50 D '59.

1. Iz Uzdenskoy rayonnoy bol'nitsy Minskoy oblasti (glavnyy vrach rayona M.M. Gerasimenko).
(PREGNANCY, PROTRACTED)
(UTERUS--ABNORMITIES AND DEFORMITIES)

KRUPEN', A.I., kand.tekhn.nauk

Types of intermediate yards used in connection with prolonged tracks. Zhel.dor.transp. 40 no.10:48-50 O '58. (MIRA 11:12)
(Railroads--Yards)

KRUPEN', A.I., kand. tekhn. nauk; MATYSEK, V.G.

Practices in building engineering structures during the construction of the Karaganda-Karagayly line. Transp. stroi. 15 no.3:15-17 Mr '65. (MIRA 18:11)

1. Nachal'nik mostopoyezda No.431 (for Matysek).

KRUPEN', A.I., kand.tekhn.nauk; ARTEM'YEV, V.I., inzh.; TUMARINSON, N.S., inzh.

Laying and ballasting track on the Karaganda - Karagayly line. (MIRA 16:1)
Transp. stroi. 12 no.12:10-13 D '62.
(Railroads--Track)

KRUPEN', A.I., kand. tekhn. nauk; TSYUPA, V.S., inzh.

Results of building a roadbed, Transp.stroi. 13 no.10:6-8 O '63. (MIRA 17:8)

KRUPEN', A.I., kand. tekhn. nauk; RODIONOV, I.P.

Building the Karaganda-Karagayly railroad line. Transp. stroi. 14 no.1:10-12 Ja '64. (MIRA 17:8)

1. Glavnyy tekhnolog tresta Karagandastroyput'.

KRUPFN', A.I., kand. tekhn. nauk; NETREBA, S.S., inzh.

Experimental settlement of large-panel buildings. Transp. stroi. 14 no.11:32-34 N '64. (MIRA 18:3)

SUD'YENKO, G.M., inzh.; KRUPEN', A.I., kand. tekhn. nauk

Experience in the fill construction of roadbed under the second track on bogs. Transp. stroi. 15 no.9:6-8 S '65. (MIRA 18:11)

KRUPEN, R.V., assistant

Effect of magnification of the image of a contact level gauge on the precision and speed of its adjustment. Izv. vys. ucheb. zav.; geod. i aerof. no.4:151-154 '63. (MIRA 17:9)

1. Latviyskaya sel'skokhozyaystvennaya akademiya.

KRUPEN, R.V. [redacted]

Testing levels by a plane-parallel plates. Geod. i kart. no.4:26-28 Ap '57. (MIRA 10:8)

(Surveying--Instruments)

KRUPEN, R.V.

Protection of geodetic signals. Geod.i kart. no.2:30-31 F '60. (MIRA 13:6)
(Surveying)

SLYUSARENKO, V.A., red.; KRUPENCHIK, B.B., red.; MELESHKIN, M.T., red.; VIRON, Ye.M., red.; KUVALDIN, D.A., red.; VITVITSKIY, M., red.izd-va; SYCHEVSKIY, I., red. izd-va; NEDOVIZ, S., tekhn. red.

[First Soviet firms; from the work practice of the production combines of the Lvov Economic Council] Pervye sovetskie firmy; iz opyta raboty proizvodstvennykh ob"edinenii L'vovskogo sovnarkhoza. L'viv, Knyzhkovo-zhurnal'ne vyd-vo, 1962. 113 p. (MIRA 16:4)

1. Sekretar' L'vovskogo oblastnogo komiteta Kommunisticheskoy partiy Ukrainy (for Slyusarenko). 2. Zaveduyushchiy promyshlennym otdelom oblastnogo komiteta Kommunisticheskoy partii Ukrainy (for Krupenchik) 4. Nachal'nik proizvodstvenno-tekhnicheskogo upravleniya L'vovskogo sovnarkhoza (for Meleshkin)

(Lvov Economic Region--Business enterprises)

KRUPENI, Ye.M., kandidat meditsinskikh nauk

A case of a total spontaneous pneumothorax of seven years duration. (MLRA 7:8)
Sov. med. 18 no.8:35 Ag '54.

1. Iz tuberkuleznogo otdeleniya fakul'tetskoy terapevticheskoy kliniki (zav. prof. N.Ye.Kavetskiy) Kuybyshevskogo meditsinskogo instituta (dir. prof. T.I.Yeroshevskiy)
(PNEUMOTHORAX
total, of 7 year follow-up)

KRUPENIK, P. I.

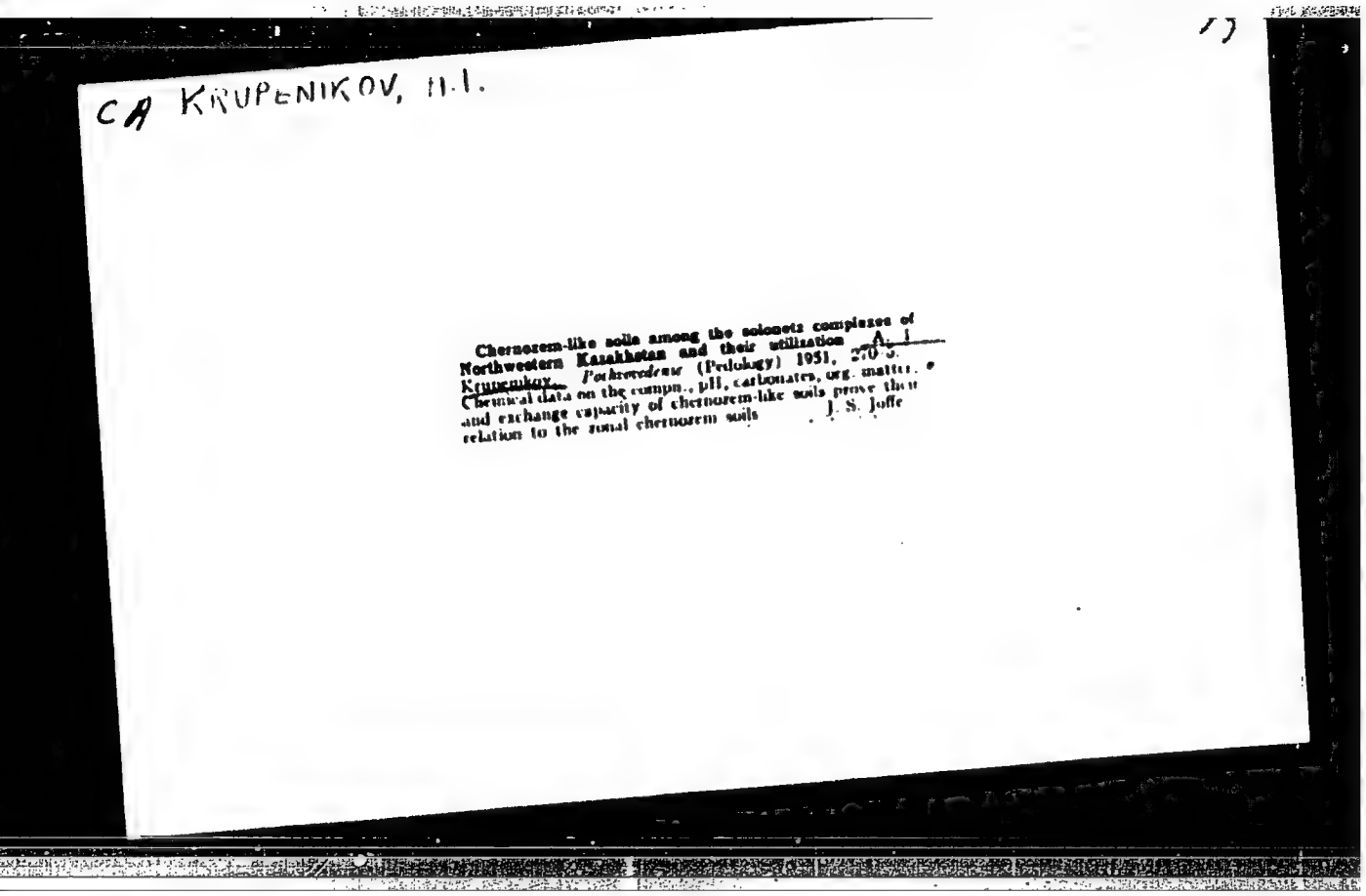
"Experiences in Supplying Petroleum Product Consumers" page 76, of the book Petroleum Bases and Pipe Lines, Gostoptekhizdat, 1956

KRUPENIK, P.I.

MATSKIN, L.A.; KOVALENKO, K.I.; BABUKOV, V.G.; KONSTANTINOV, N.N.; PONOMAREV, G.V.; PAL'CHIKOV, G.N.; PELENICHKO, L.G.; SHAMARDIN, V.M.; GLADKOV, A.A.; BRILLIANT, S.G.; SHEVCHUK, V.Ya.; SOSHCHEN-KO, Ye.M.; ALEKSANDROV, A.M.; BUNCHUK, V.A.; KRUPENIK, P.I.; MAYEVSKIY, V.Ya.; YELSHIN, K.V.; GAK, Kh.A.; POTAPOV, G.M.; KARDASH, I.M.; STEPURO, S.I.; KAPLAN, S.A.; SELIVANOV, T.I.; YEREMENKO, N.Ya.; ZHUZH, A.D.; USTINOV, A.A.; GIRKIN, G.M.; VOLOBUYEV, P.P.; CHERNYAK, I.L., nauchnyy red.; DESHALYT, M.G., vedushchiy red.; GENNAD'YEVA, I.M., tekhn.red.

[Combating losses of petroleum and petroleum products; materials of the All-Union Conference on Means of Combating Losses of Petroleum and Petroleum Products] Bor'ba s poteriami nefti i nefteproduktov; po materialam Vsesoiuznogo soveshchaniia po bor'be s poteriami nefti i nefteproduktov. Leningrad, Gos.nauchno-tekhn. izd-vo neft. i gorno-toplivnoi lit-ry, 1959. 157 p. (MIRA 13:2)

1. Nauchno-tekhnicheskoye obshchestvo neftyanoy i gazovoy promyshlennosti.
(Petroleum industry)



CA KRUPENIKOV, N.I.

Chernozem-like soils among the solonets complexes of Northwestern Kazakhstan and their utilization. A. I. Krupenikov. *Pochvovedenie* (Pedology) 1951, 270-5. Chemical data on the compn., pH, carbonates, org. matter, and exchange capacity of chernozem-like soils prove their relation to the zonal chernozem soils. J. S. Joffe

L 18561-66 EWT(m)/EWP(w)/EWP(v)/T-2/EWP(k)/ETC(m)-6 EM
ACC NR: AP6006428 SOURCE CODE: UR/0143/65/000/010/0056/0062

AUTHOR: Deych, M. Ye. (Doctor of technical sciences, Professor); Kiselev, L. Ye. (Engineer); Krupennikov, B. N. (Engineer)

ORG: Moscow "Order of Lenin" Power Engineering Institute (Moskovskiy ordena Lenina energeticheskiy institut)

TITLE: Effect of the departure angle on the characteristics of radially expanding turbine blading

SOURCE: IVUZ. Energetika, no. 10, 1965, 56-62

TOPIC TAGS: turbine blade, flow angle, turbine design

ABSTRACT: The characteristics of radial turbine blading with a d/l ratio of 2.5 were studied in subsonic air streams at departure angles of 9, 12, 15 and 18°. The wheels studied were made up of 30 vanes with a height l=100 mm and identical geometric characteristics in all cases with the exception of the departure angle. The flow parameters were measured in front of and behind the blading. Measurements were made at ten points between blades, in 15-25 sections along the height of the blade and at distances z=5, 15, 25 mm from the outlet edge of the blades which corresponds to

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$\bar{z}=z/b=0.125$, 0.375, 0.625. The resultant data were used for determining the distribution of the following parameters with respect to the height of the blading: breaking pressure p_{01}, static pressure p_1, and flow departure angles α_1 and α_2 in the meridian direction. Angle α_1 is measured between the projection of velocity c_1 on the cylindrical surface and the direction of the periferal component of velocity c_{1_u}; angle α_2 is measured between the vector of velocity c_1 and its projection on the cylindrical surface. It was found that an increment in the effective angle of departure increases the difference between the static pressures at the periphery and root of the blading due to a reduction in energy losses and a corresponding increase in the velocity of the departing air at the root section. Measurements of departure angles α_1 show that they are greater than the effective departure angles. When the effective departure angle is increased, the difference between the average value of the measured angle and the effective angles is reduced, which may also be explained by a reduction in energy losses and less redistribution in the rate of air flow with respect to height. The average values of the meridian angles with respect to blading height $(\alpha_2)_{av}$ are a linear function of the effective departure angle: $(\alpha_2)_{av}=0°$ for $\bar{z}=0.125$ at an effective departure angle of 15°. At smaller effective departure angles, the average values of α_2 are positive, which corresponds to de-

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ACC NR: AP6006428

flection of the line of flow from the root to the periphery. This is due both to a high degree of twisting in the stream and to the highly developed region of energy losses in the lower half of the turbine blading. The effective departure angle has a considerable effect on the distribution of energy losses, particularly in the root section. There is a sharp reduction in energy losses with an increase in the effective angle of departure, especially at great distances from the vanes. Experimental data show a predetached flow and extremely high energy losses in radially expanding turbine blading arrangements with effective departure angles of less than 15°. Orig. art. has: 7 figures.

SUB CODE: 10,13/ SUBM DATE: 18Jul64/ ORIG REF: 000/ OTH REF: 000

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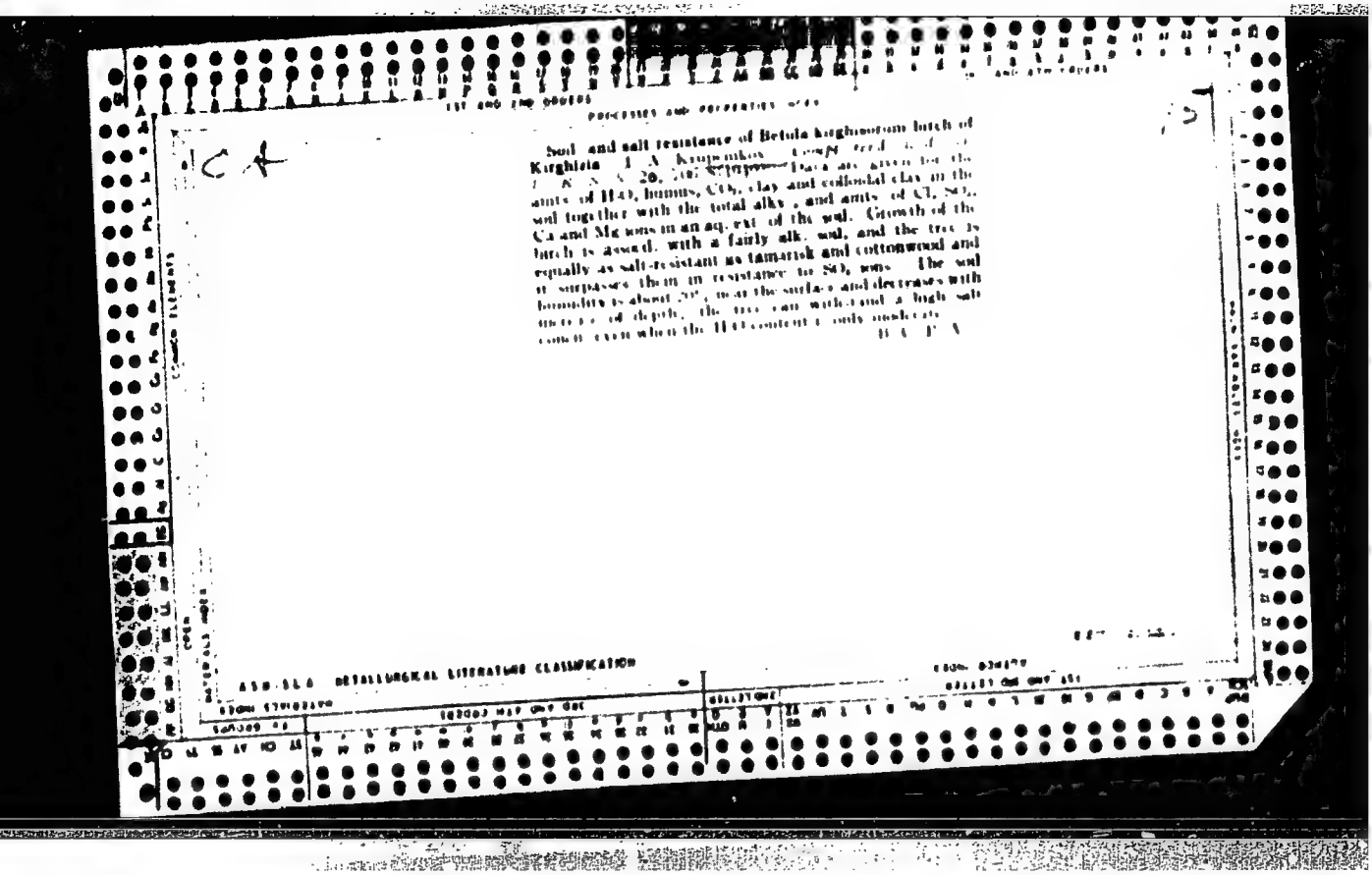
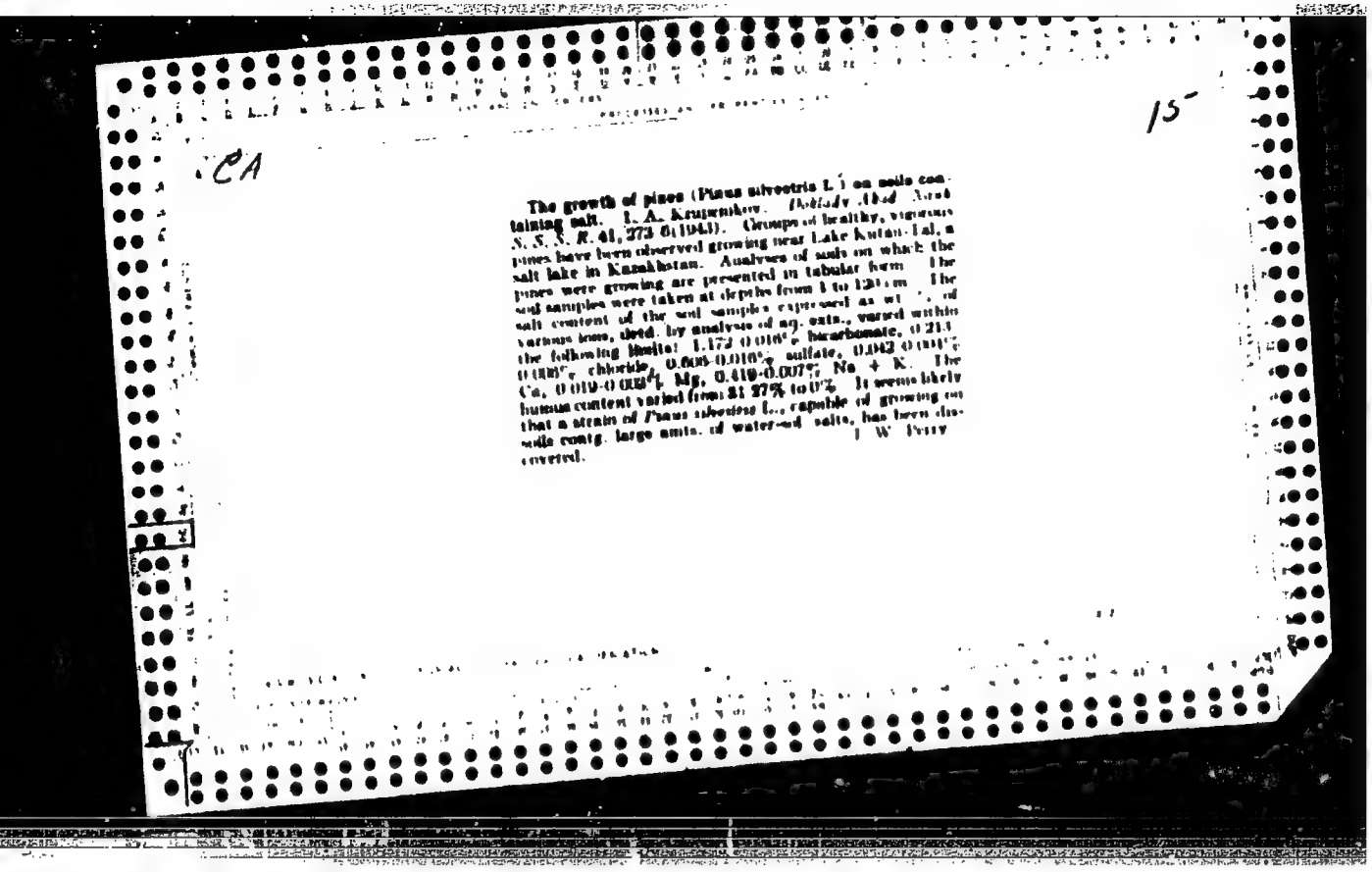


Soil and salt resistance of Betula kirghisorum birch of Kirghizia [illegible] — [illegible] soil together with the total alks., and amts. of Cl, SO4, Ca and Mg ions in an aq. ext. of the soil. Growth of the birch is stunted with a fairly alk. soil, and the tree is equally as salt-resistant as tamarisk and cottonwood and it surpasses them in resistance to SO4 ions. The soil humidity is about 20%, near the surface and decreases with increase of depth; the tree can withstand a high salt content even when the H2O content is only moderate.

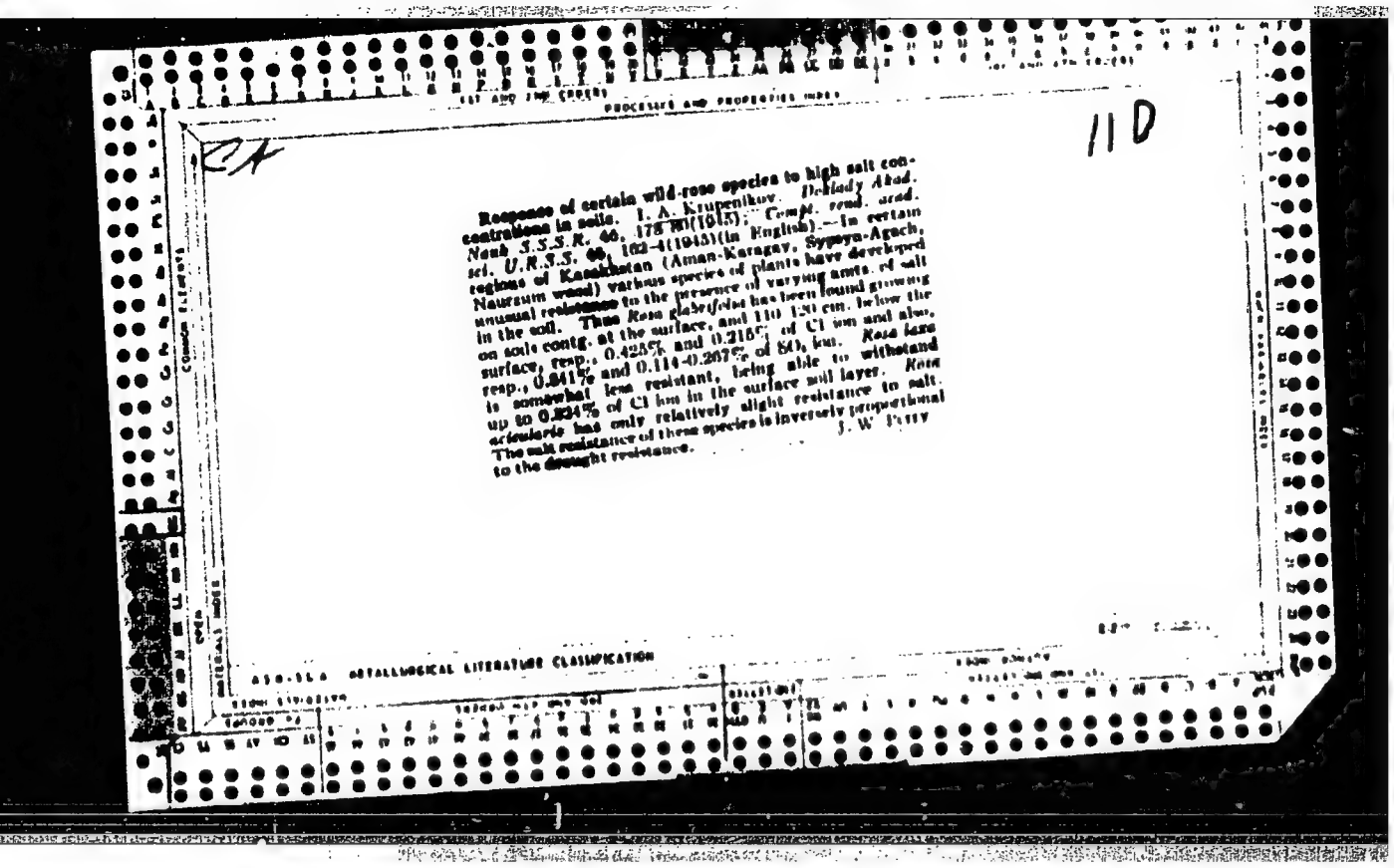


CA

15

The growth of pines (Pinus silvestris L.) on soils containing salt. I. A. Krugovykh. *Doklady Akad. Nauk S. S. S. R.* 41, 273-6 (1943). Groups of healthy, vigorous pines have been observed growing near Lake Kutan-Tal, a salt lake in Kazakhstan. Analyses of soils on which the pines were growing are presented in tabular form. The soil samples were taken at depths from 1 to 120 cm. The salt content of the soil samples expressed as wt. % of various ions, detd. by analyses of aq. extts., varied within the following limits: 1.172-0.016% bicarbonate, 0.214-0.018% chloride, 0.608-0.016% sulfate, 0.042-0.004% Ca, 0.019-0.003% Mg, 0.419-0.077% Na + K. The humus content varied from 21.27% to 0%. It seems likely that a strain of *Pinus silvestris* L., capable of growing on soils contg. large amts. of water-sol. salts, has been discovered.

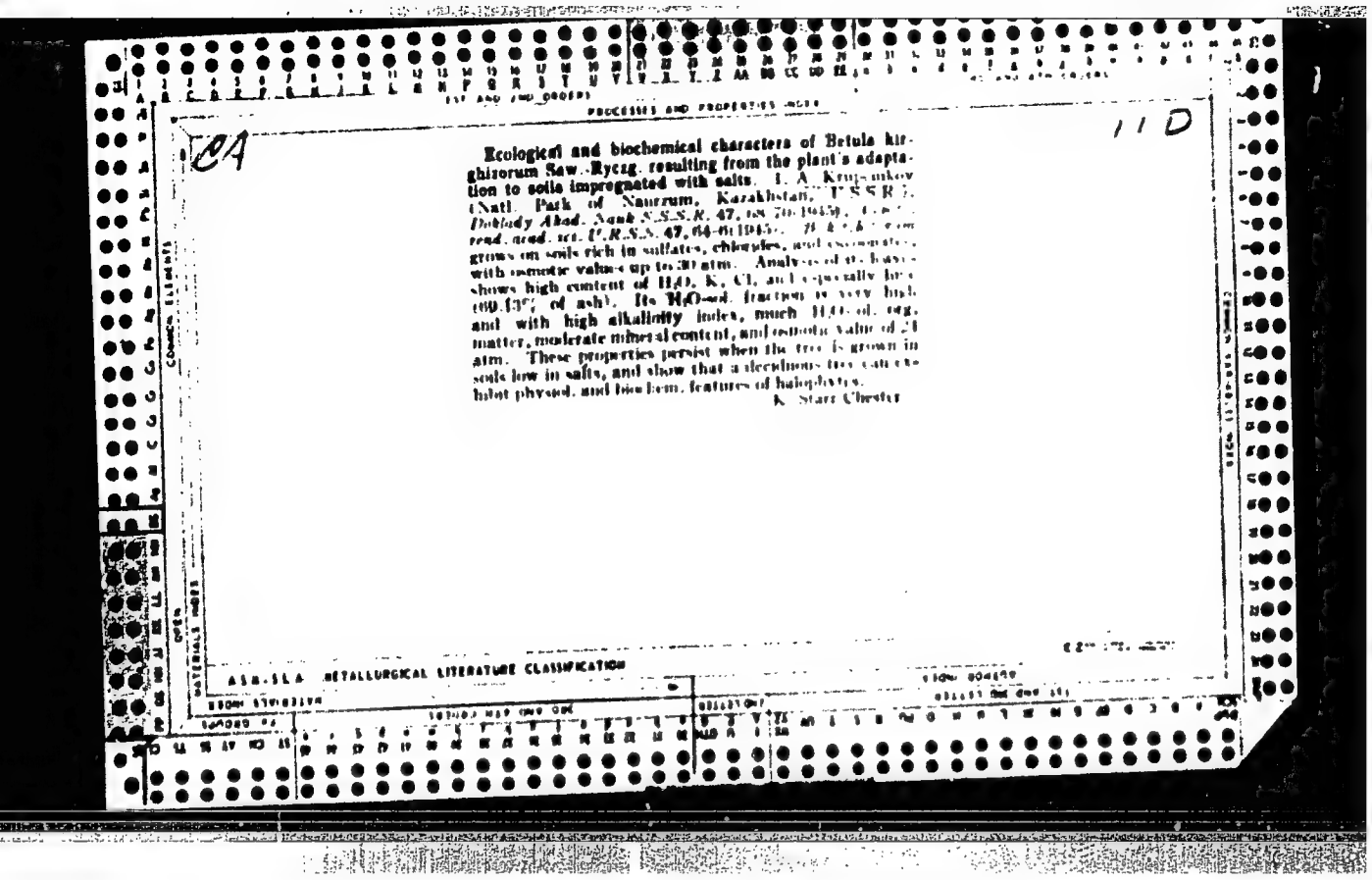
J. W. Perry



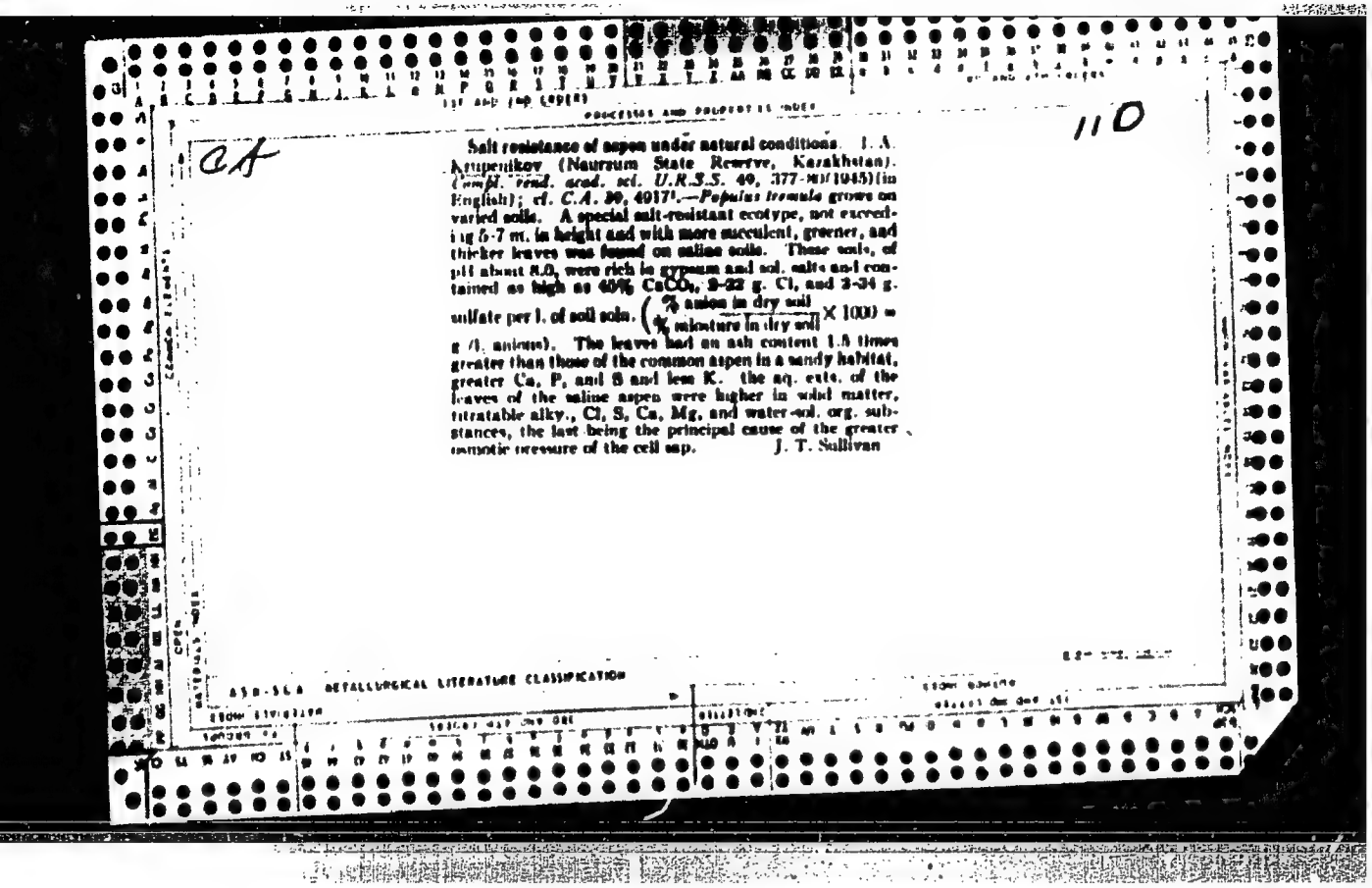
11D

Response of certain wild-rose species to high salt concentrations in soils. I. A. Kruperikov. *Doklady Akad. Nauk S.S.S.R.* 46, 178-80(1945); *Compt. rend. acad. sci. U.R.S.S.* 46, 182-4(1945)(in English).—In certain regions of Kazakhstan (Aman-Karagay, Sypsyn-Agach, Naurzum wood) various species of plants have developed unusual resistance to the presence of varying amts. of salt in the soil. Thus *Rosa glabrifolia* has been found growing on soils contg. at the surface, and 110-130 cm. below the surface, resp., 0.425% and 0.216% of Cl ion and also, resp., 0.841% and 0.114-0.207% of SO$_4$ ion. *Rosa laxa* is somewhat less resistant, being able to withstand up to 0.324% of Cl ion in the surface soil layer. *Rosa acicularis* has only relatively slight resistance to salt. The salt resistance of these species is inversely proportional to the drought resistance.

J. W. Perry



Ecological and biochemical characters of Betula kirghizorum Saw.-Rycag. resulting from the plant's adaptation to soils impregnated with salts. I. A. Krupnikov (Natl. Park of Naurzum, Kazakhstan, USSR). *Doklady Akad. Nauk S.S.S.R.* 47, 68-70 (1945). [illegible] grows on soils rich in sulfates, chlorides, and [illegible] with osmotic values up to 30 atm. Analyses of [illegible] shows high content of H_2O, K, Cl, and [illegible] (60-13% of ash). Its H_2O-sol. fraction is very high and with high alkalinity index, much H_2O-sol. org. matter, moderate mineral content, and osmotic value of 21 atm. These properties persist when the tree is grown in soils low in salts, and show that a deciduous tree can exhibit physiol. and biochem. features of halophytes.
K. Starr Chester

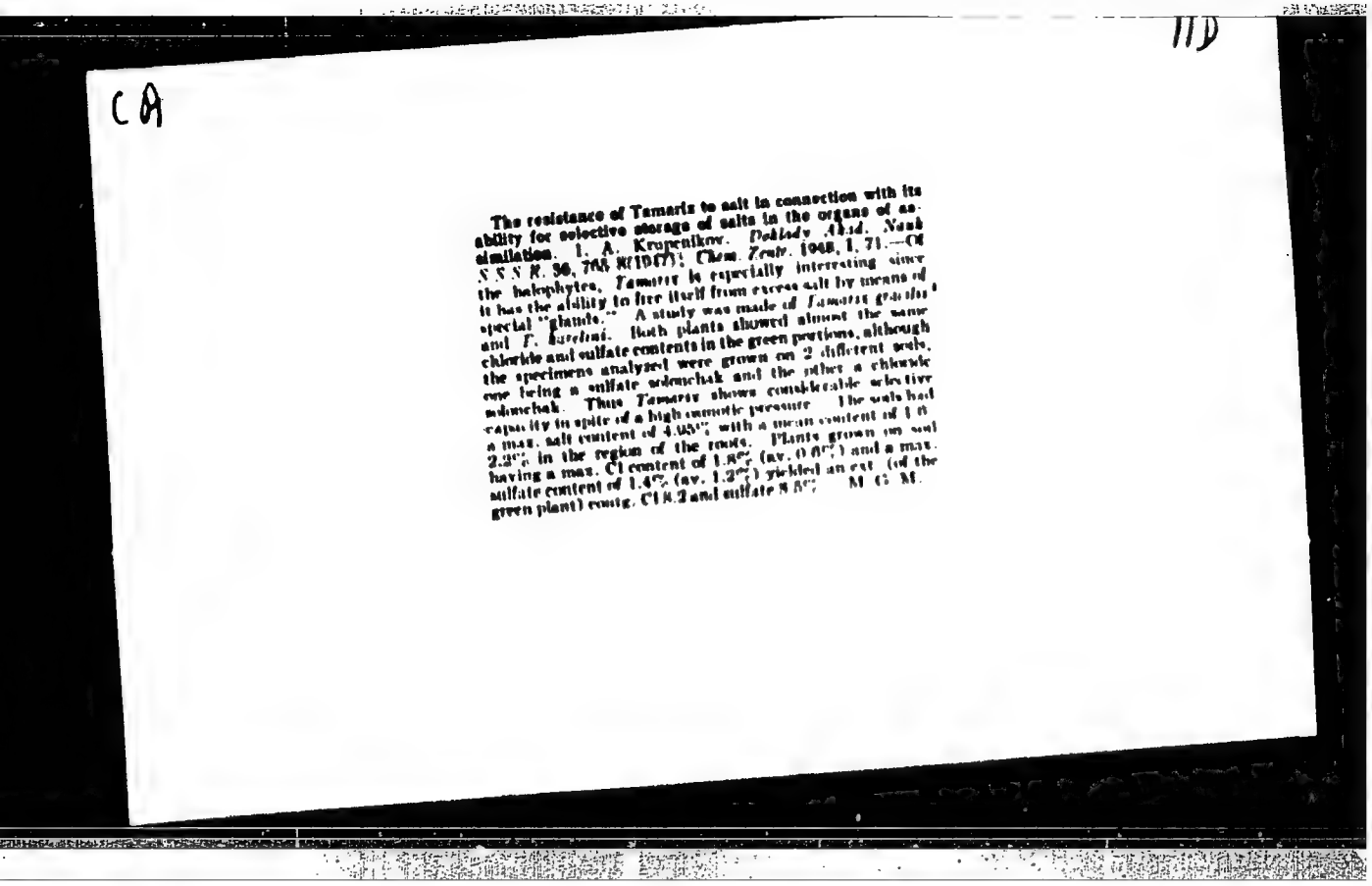


CA

110

Salt resistance of aspen under natural conditions. I. A. Artyushkov (Naurzum State Reserve, Kazakhstan). *Compt. rend. acad. sci. U.R.S.S.* 49, 377-80 (1945) (in English); cf. *C.A.* 39, 4917[1].—*Populus tremula* grows on varied soils. A special salt-resistant ecotype, not exceeding 5-7 m. in height and with more succulent, greener, and thicker leaves was found on saline soils. These soils, of pH about 8.0, were rich in gypsum and sol. salts and contained as high as 40% $CaCO_3$, 2-22 g. Cl, and 2-34 g. sulfate per l. of soil soln. $\left(\frac{\%\text{ anion in dry soil}}{\%\text{ moisture in dry soil}} \times 100\right) =$ g./l. anions). The leaves had an ash content 1.5 times greater than those of the common aspen in a sandy habitat, greater Ca, P, and S and less K. the aq. ext. of the leaves of the saline aspen were higher in solid matter, titratable alky., Cl, S, Ca, Mg, and water-sol. org. substances, the last being the principal cause of the greater osmotic pressure of the cell sap. J. T. Sullivan

ASB-SCA METALLURGICAL LITERATURE CLASSIFICATION



CA

IIJ

The resistance of Tamarix to salt in connection with its ability for selective storage of salts in the organs of assimilation. I. A. Krupenikov. *Pochvy Alma-Ata. Nauk S S S R.* 36, 705 (1947); *Chem. Zentr.* 1948, I, 71.—Of the halophytes, *Tamarix* is especially interesting since it has the ability to free itself from excess salt by means of special "glands." A study was made of *Tamarix gracilis* and *T. hordini*. Both plants showed almost the same chloride and sulfate contents in the green portions, although the specimens analyzed were grown on 2 different soils, one being a sulfate solonchak and the other a chloride solonchak. Thus *Tamarix* shows considerable selective capacity in spite of a high osmotic pressure. The soils had a max. salt content of 4.05%, with a mean content of 1.0 2.2% in the region of the roots. Plants grown on soil having a max. Cl content of 1.8% (av. 0.0%) and a max. sulfate content of 1.4% (av. 1.2%) yielded an ext. (of the green plant) containing Cl 8.2 and sulfate 8.8%. M. G. M.

KRUPENIKOV, I. A.
25745

Orazvitii Stolovogo Vinogradarstva Na
Yuzhnom Beregu Kryma. Binodeliye I
Vinogradarstvo SSSR, 1948, No 6, S. 28-30

SO: LETOPIS NO. 30, 1948

[illegible], I. I.

[illegible]. Nabludeniya za snezhnym pokrovom v murmanskom zapovednike zimoy 1940-41 goda. Trudy Murman. [illegible]. zapovednika, VIP. [illegible], 1[illegible], s. [illegible]

SO: Letopis' Zhurnal'nykh Statey, Vol. 7, 1949

KRUPENIKOV, I. A.

PA 48/49T46

USSR/Geography
Salt Marshes

Mar/Apr 49

"Sors," I. A. Krupenikov, 12½ pp

"Iz v-s Geograf Obshch" Vol LXXXI, No 2

Data is based on observation in Naurzum State Reservation. A sor, an unusual type of salt-marsh, is a flat, saucer-shaped depression about 1.5-3 meters below the sand surrounding it. Its plane is usually oval. Size varies greatly; usually, length does not exceed 500 meters and breadth 300. In spring and autumn, surface is covered with water. In summer, water evaporates

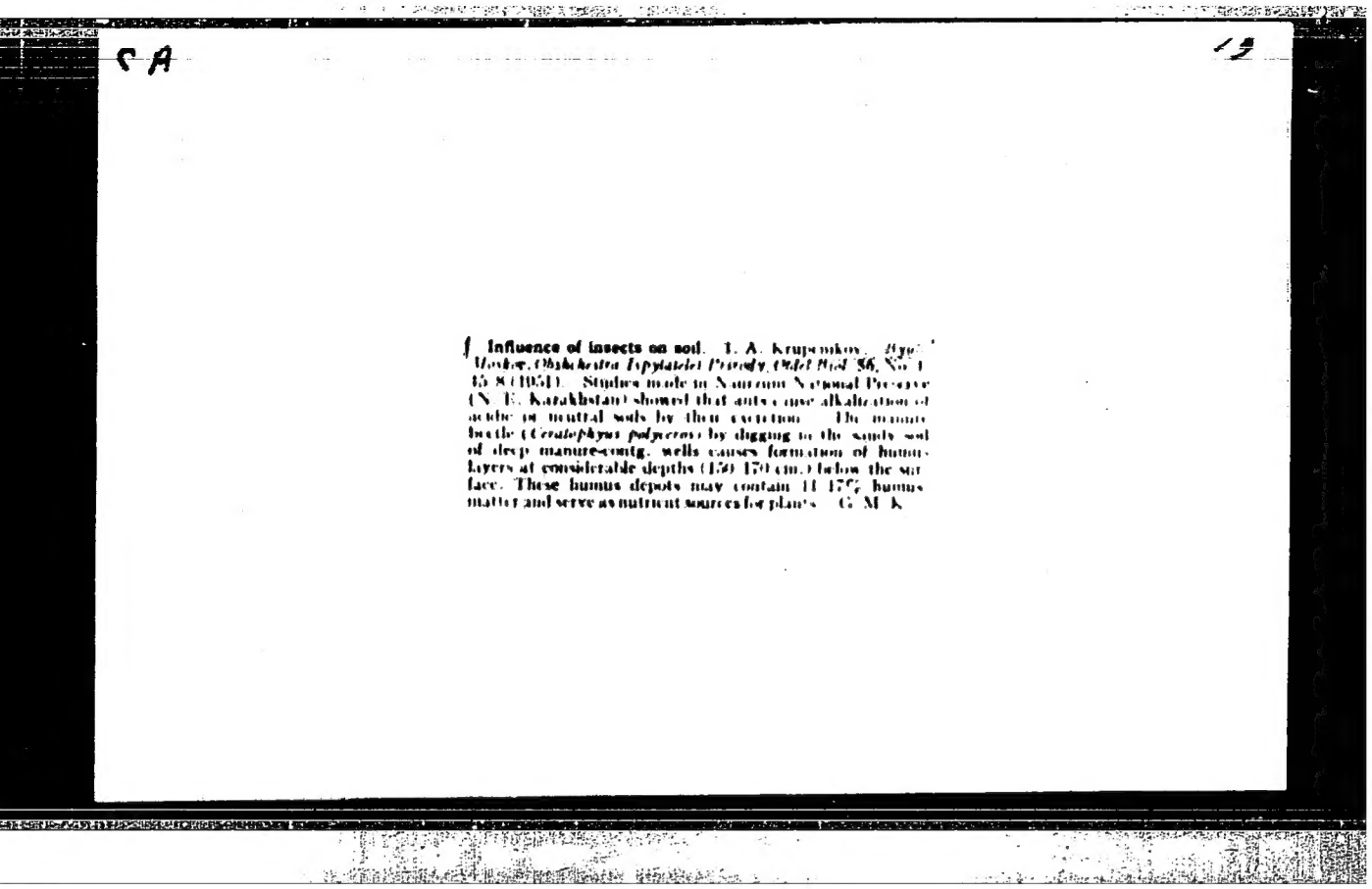
48/49T46

USSR/Geography (Contd)

Mar/Apr 49

and sor's surface is covered with a shining coat of salt. Discusses nature and origin of sors. Includes photograph, two graphs, six tables.

48/49T46



CA

12

Influence of insects on soil. I. A. Krupenikov. *Byul. Vostok. Otdelenia Tsentr. Inst. Pochvovedenia, Otdel Biol.* 56, No. 1, 15-8 (1951). Studies made in Naurzum National Preserve (N. E. Kazakhstan) showed that ants cause alkalization of acidic or neutral soils by their excretion. The mammoth beetle (*Ceratophyus polyceros*) by digging in the sandy soil of deep manure-contg. wells causes formation of humus layers at considerable depths (150-170 cm.) below the surface. These humus depots may contain 11-17% humus matter and serve as nutrient sources for plants. G. M. K.

KRUPENIKOV, I.A.

The Committee on Stalin Prizes (of the Council of Ministers USSR) in the fields of science and inventions announces that the following scientific works, popular scientific books, and textbooks have been submitted for competition for Stalin Prizes for the years 1952 and 1953. (Sovetskaya Kultura, Moscow, No. 22-40, 20 Feb - 3 Apr 954)

Name	Title of Work	Nominated by
KRUPENIKOV, I.A.	"V.V. Dokuchayev"	Kishinev State University

SO: W-30604, 7 July 1954